BUS TRANSPORTATION

These Fageol Twin Coach developments mark important milestones in Transit's 100 years of progress!

1951

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1938

FAGEOL TWIN COACH

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Performance—that's the basis for selecting brake lining for your vehicles. Is it safe, fully dependable, under all conditions? Does it wear slowly, evenly? Give maximum mileage? Does it keep maintenance costs low?

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In This Issue . . .

• Just about every basic bus industry problem gets a going over in this, our Convention Issue. And we have been fortunate in lining up top experts in both the intercity and transit fields to sound off on them in forthright fashion. Whatever your particular problem or concern may be, we believe you will find it dealt with in the following pages. You may not find all the answers, but you will get fresh viewpoints and new light on subjects close to industry management.

• With such abundant expression of expert opinion, it is difficult to single out any articles for special mention. However, because of its timeliness and thorough treatment, be sure not to miss Decentralization 1951 Style ..... p. 63

• Our Bus Show in Print this year gives a preview of all the latest bus models, as well as a glimpse of what's available in new equipment. The Show provides more than 25 pages of exciting pictures and text..... p. 76

Next Month . . .

• We know you'll be looking forward to our October issue which, as usual, will wrap up both the NAMBO and ATA conventions. Complete coverage, in pictures and text, will be given each meeting.

ABP

BUS TRANSPORTATION

ABC

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BUS TRANSPORTATION
(With which is consolidated Bus Age)

SEPTEMBER, 1951 **VOL. 30, NO. 9**

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Articles in Bus Transportation are listed in an index made available on request at the close of each year.

A SALUTE TO *Progress*

Remember the last time you saw a horsecar? Probably not. Perhaps you *never* saw one. But horse cars were the mainstays of the urban transit industry during the latter half of the Nineteenth Century.

This month, the American Transit Association marks 100 years of transit progress. Since 1851, urban transit has improved and expanded swiftly, and has, thanks to an unending program of research and development, earned the confidence and support of *millions* of daily riders. These passengers depend upon the bus, street car, trolley coach or rapid transit train to take them to and from their jobs. Truly, urban transit is *essential* transportation.

The Timken-Detroit Axle Company salutes the American Transit Association on this centennial. It takes pride, too, in the part it has played in this industry's advance. For the past 42 years, when urban transit's greatest strides were being made, the finest axles and brakes obtainable have come out of Timken-Detroit's plants. All trolley coaches and the majority of motor buses built today are equipped with Timken-Detroit Axles and Brakes.

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SEPTEMBER 24

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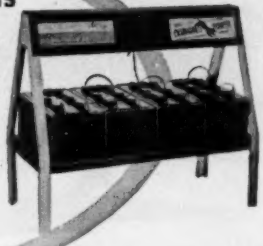

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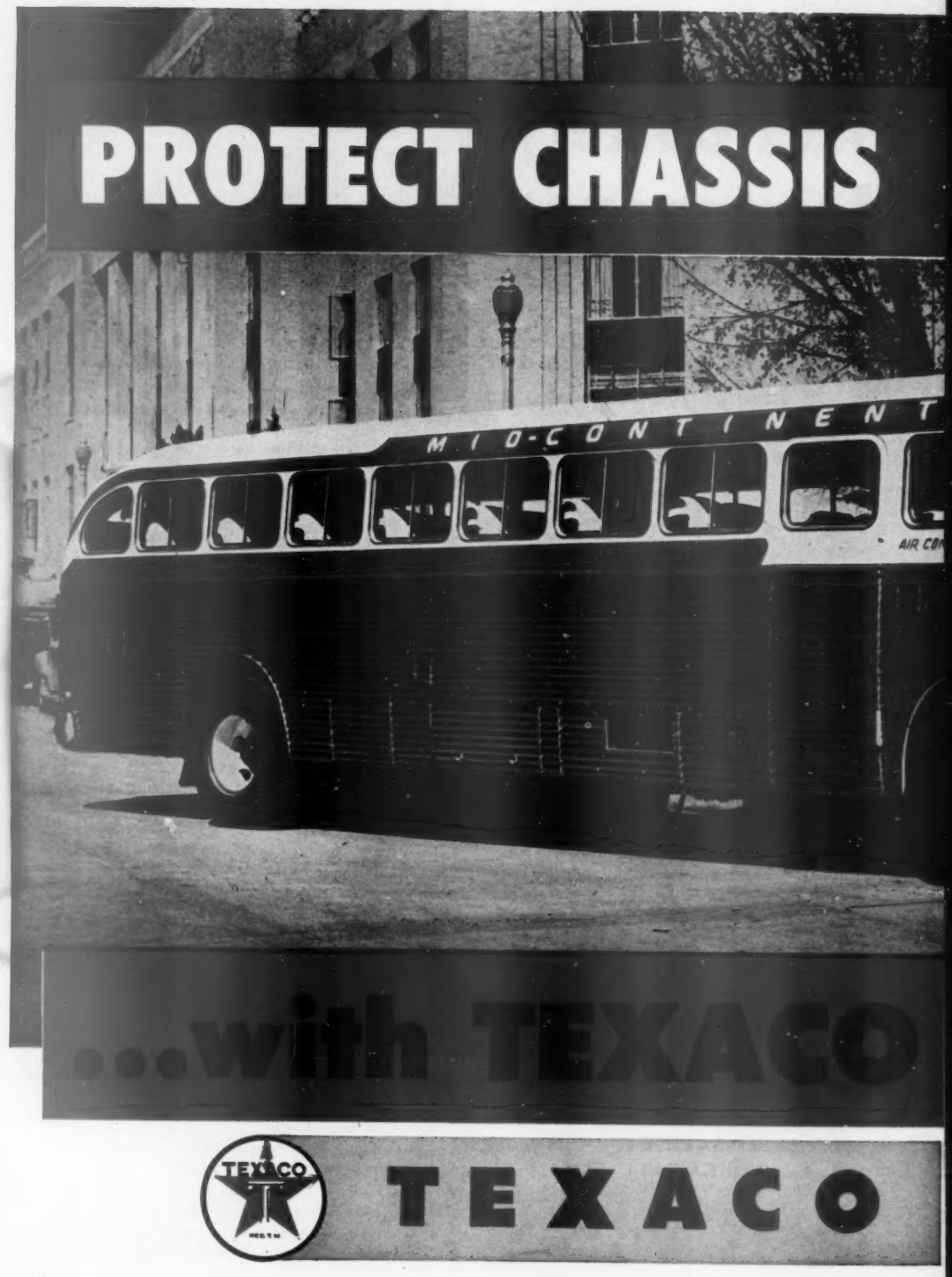
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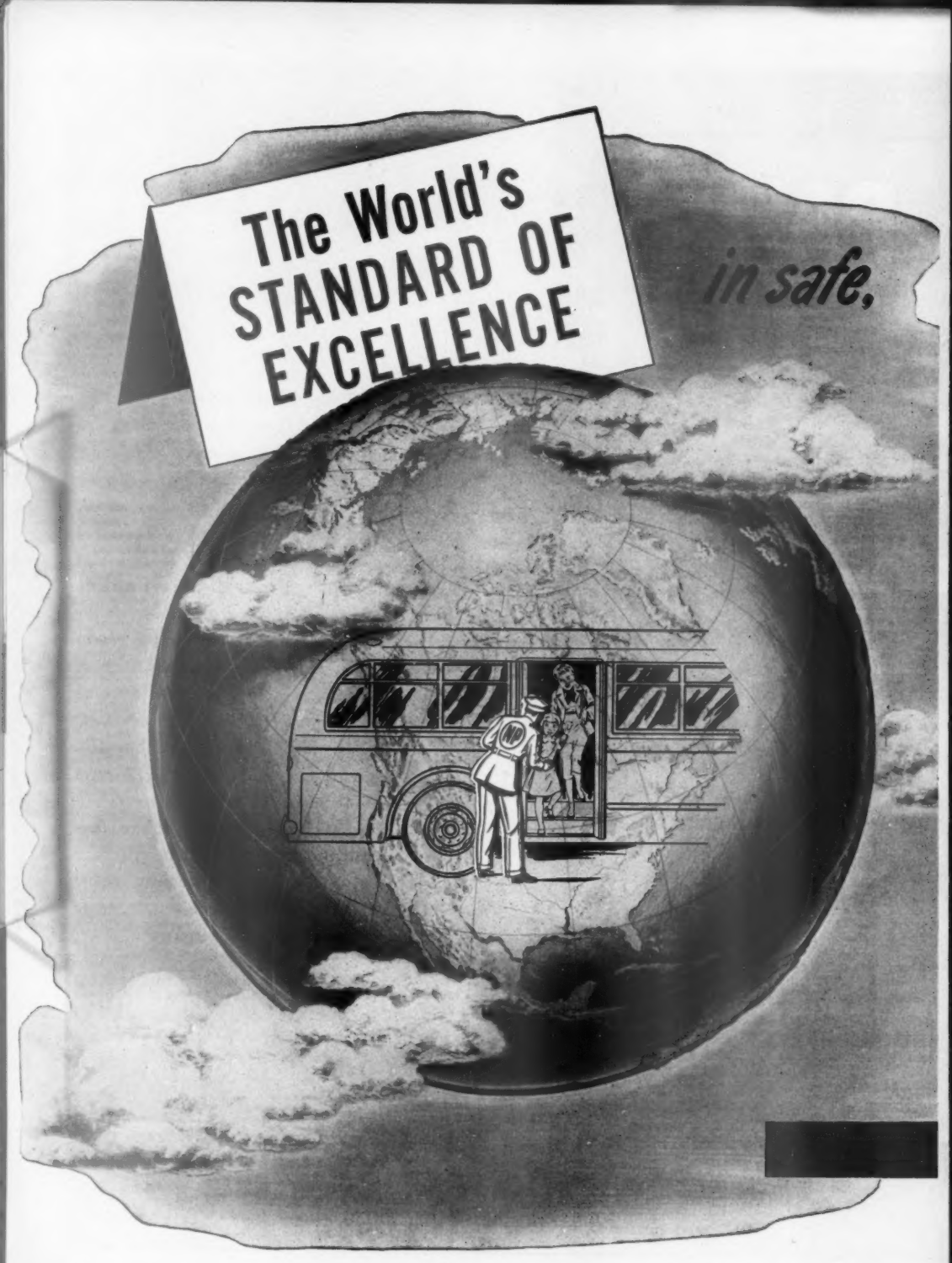
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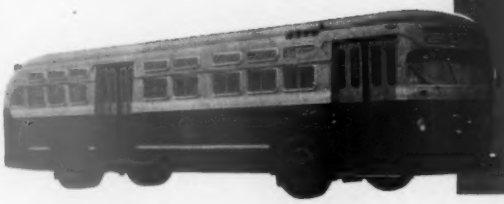

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for these new MACKS

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"OUR CHOICE OF
Wagner Air Brakes
has been more than justified by
their low maintenance cost"
SAYS THE PITTSBURGH AND WEIRTON BUS CO.

Successful bus operators like the Pittsburgh and Weirton Bus Company know that efficient brakes play an important part in the profitable operation of their fleet. They know, from actual experience, that Wagner Air Brakes have given them outstanding economies—that's why Mr. Anthony Battaglia said: "our choice of Wagner Air Brakes has been more than justified by their low maintenance costs."

You will find that when you equip your buses with Wagner Air Brakes, maintenance is no problem. First, they require less maintenance than ordinary air brakes because of such engineering achievements as the Wagner Rotary Compressor and the Wagner Power Cluster. Second, when maintenance is necessary it can be handled quickly and economically by a National Service Organization manned by trained brake experts, assuring quick, dependable service.

Write today for your copy of Wagner Air Brake Bulletin KU-201.

The Pittsburgh and Weirton Bus Company
401 Pennsylvania Avenue
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March 17, 1951

Wagner Electric Corporation
Branch Office
Pittsburgh, Pennsylvania

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On the basis of our successful use of Wagner Air Compressors on our buses, it is a pleasure to report some of the results.

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Our choice of Wagner Air Brakes has been more than justified by their low cost of maintenance—they are an important factor of economy in our operations.

Add to this their easy installation, quiet operation, and absence of carbon in the brake lines, and you can readily see why we endorse the Wagner Rotary Compressor.

Yours very truly,

PITTSBURGH AND WEIRTON BUS COMPANY

Anthony Battaglia
Traffic Manager

Wagner AIR BRAKES
The Only System with The Rotary Air Compressor

KU-201

Wagner Electric Corporation

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Citizen-Owners Smile as

San Francisco Trolley Coaches

Net $500,000 for 1950

● "Yes," says the smiling citizen in the newspaper advertisement, "we've got a *New* Municipal Railway."

In the past four years, San Francisco Municipal Railway has spent $20,000,000 for the rehabilitation of its system. A recent newspaper ad tells the citizen-owners what they got for their money . . . 658 new vehicles, including 364 trolley coaches, 259 motor coaches and 35 streetcars; 13 new trolley coach lines; eight new bus routes and extensions; four new maintenance yards.

The citizen-owners of the Municipal Railway have reason to beam over these and many other features of their *new* system. But, they have a special smile for the performance of their new trolley coaches. The official report on the Rehabilitation of the Municipal Railway tells its story this way:

"The success of trolley coach operation in San Francisco has been clearly proved both in public acceptance and in net earnings. In 1950, the trolley coach lines earned net income after depreciation of $504,583. All other transit mediums . . . lost money. Public interest dictates further expansion of the trolley coach net."

Performance like this gives every transit rider and every transit owner something to smile about when their system uses trolley coaches.

Ohio Brass

MANSFIELD OHIO, U. S. A.

LINE MATERIAL AND CAR EQUIPMENT FOR TROLLEY COACHES AND STREETCARS

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4132-Y

Market Street at 5 P. M., before (above) and after (right) conversion to trolley coach.

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Delco-Remy electrical units are the overwhelming choice of car and truck manufacturers for original equipment.

Delco-Remy electrical equipment stays on the job because Delco-Remy supplies *all* the service parts when you need them for every Delco-Remy application—gasoline or Diesel, large or small, old or new. And Delco-Remy parts are available *everywhere* through a nationwide network of distributors.

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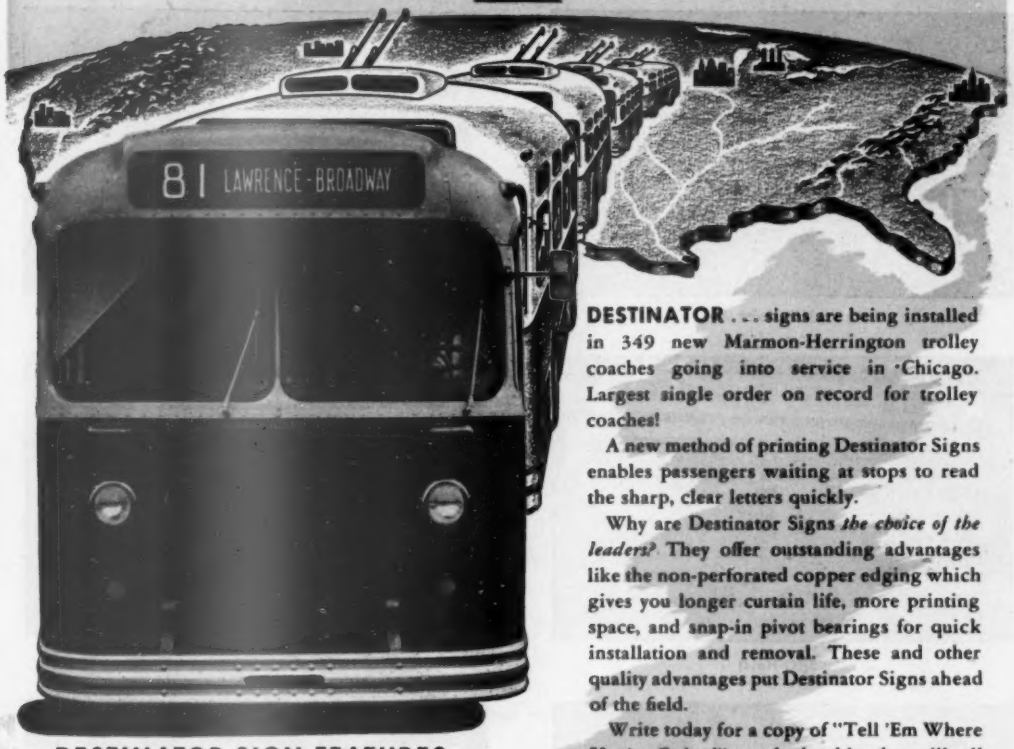
DESTINATOR

SIGNS FOR 349 NEW TROLLEY COACHES!



DESTINATOR . . . signs are being installed in 349 new Marmon-Herrington trolley coaches going into service in Chicago. Largest single order on record for trolley coaches!

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Write today for a copy of "Tell 'Em Where You're Going!" . . . the booklet that will tell you how to "sign up" your buses for more profit.

DESTINATOR SIGN FEATURES

- Clear, clean printing
- Non-perforated copper edging
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- Snap-in type pivot bearing mounting
- Non-ratchet type clutch

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not price . . . yet priced competitively.

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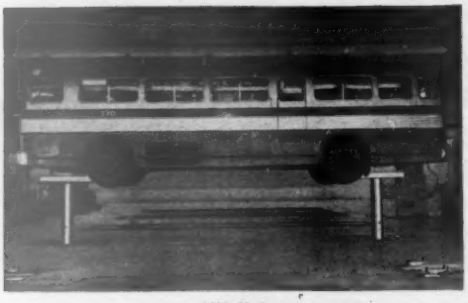
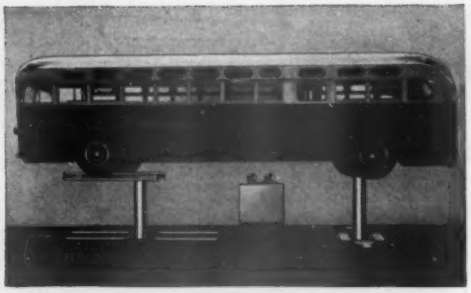
From Coast-to-Coast

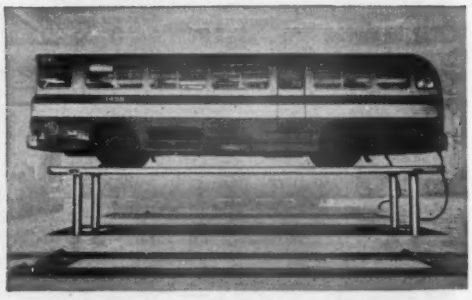


SHR Hoist



SER Hoist

SRO Hoist



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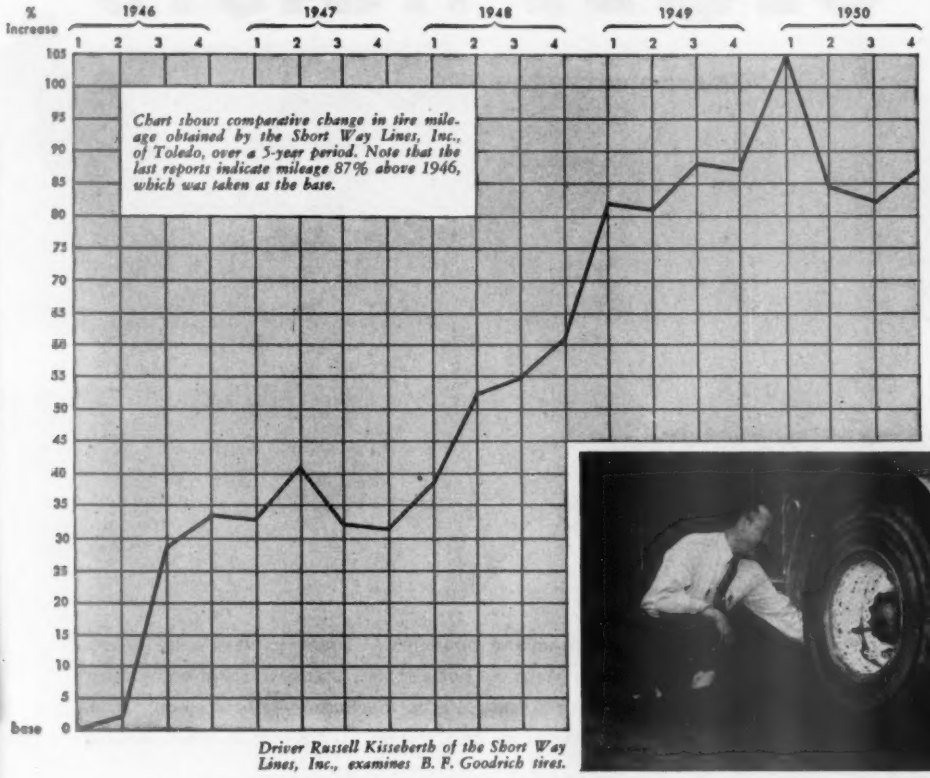
Tires with nylon shock shield increase Short Way Lines mileage by 87 per cent



Driver Russell Kisseberth of the Short Way Lines, Inc., examines B. F. Goodrich tires.

THE Short Way Lines, Inc., of Toledo, Ohio, operates 65 buses throughout Ohio, Michigan and Indiana. These buses cover nearly 2,000,000 miles a year. A user of B. F. Goodrich tires exclusively, this company finds they are very well suited to high speed intercity driving. Since 1946, average tire mileage has increased 87%!

B. F. Goodrich tires give excellent service and mileage, Short Way Lines reports. One reason is the nylon shock shield, exclusive BFG feature built between the tread rubber and cord body. Layers of strong nylon cords stretch together to shield the tire body from road shocks and impacts. You save 4 ways: (1) greater average mileage (2) increased bruise resistance (3) less danger of tread separation (4) more recappable tires.

The B. F. Goodrich Highway Express tread helps boost service records. It's built wider at road level across the entire width of the tire so *all* the tread shares the wear slowly and evenly. Each rib is edged with hundreds of curves that increase skid resistance. No wonder Short Way Lines estimates that Highway Express tires will give them an average of 115,000 to 125,000 miles!

Similar reports come from bus operators everywhere: B. F. Goodrich tires give increased mileages and fewer road delays, *without* additional air pressures. Switch to BFG tires now. Get all the details by writing *The B. F. Goodrich Company, Akron, Ohio.*

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Good or bad, the materials that go into your buses are all part of the transportation team you depend on to make a profit. Why be penalized by the dirty work of Red Rust . . . or the costly "piling on" of needless Dead Weight?

Profit-minded fleets find that Alcoa Aluminum is a good way to keep Red Rust and Dead Weight out of action. Used for bodies, chassis and engine parts, wheels and trim, aluminum fights corrosion, reduces maintenance cost. Its light weight stretches operating dollars.

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FORMING MACHINING RIVETING WELDING

ALCOA *First in Aluminum*

ALCOA ALUMINUM

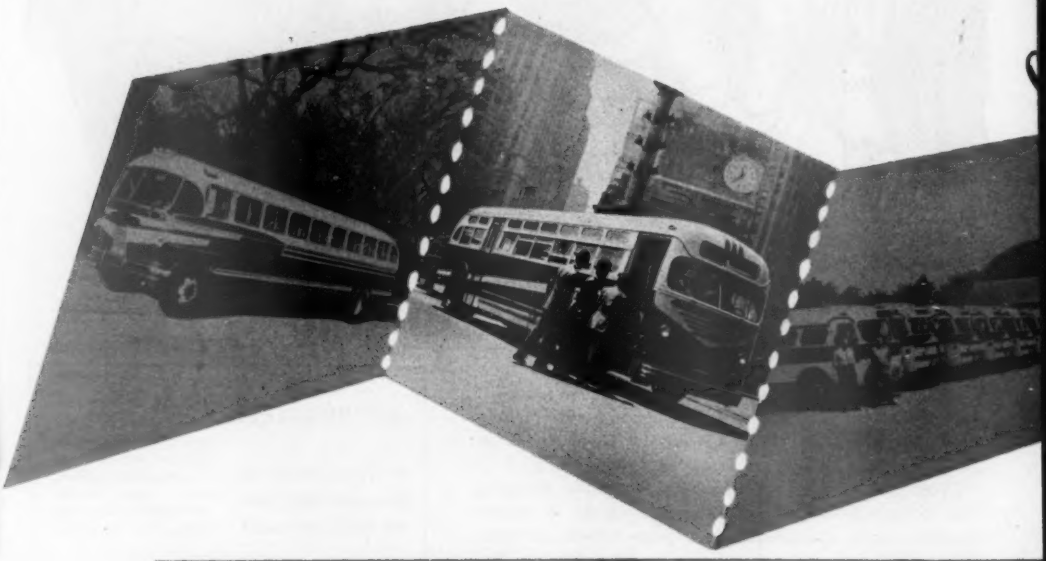
THE LIGHT METAL ® THAT LASTS

LONGER ENGINE LIFE

because this lubricating oil also

CLEANS ENGINES

— and keeps them clean!



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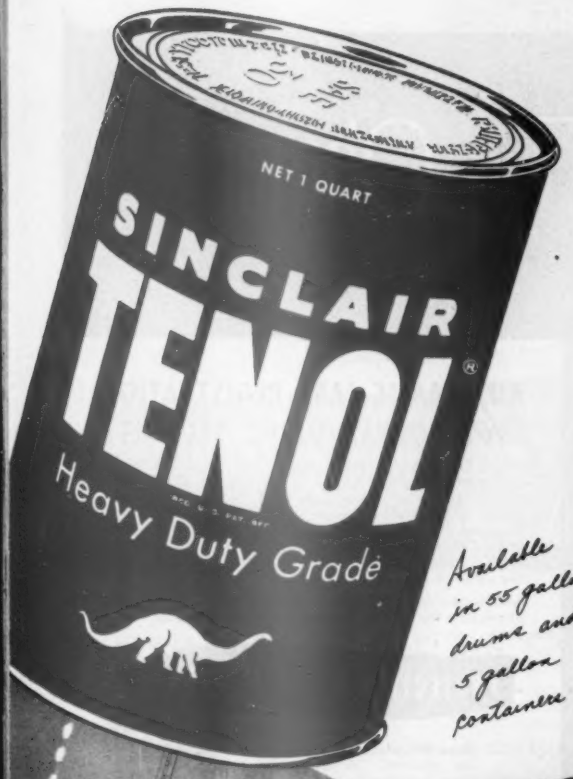

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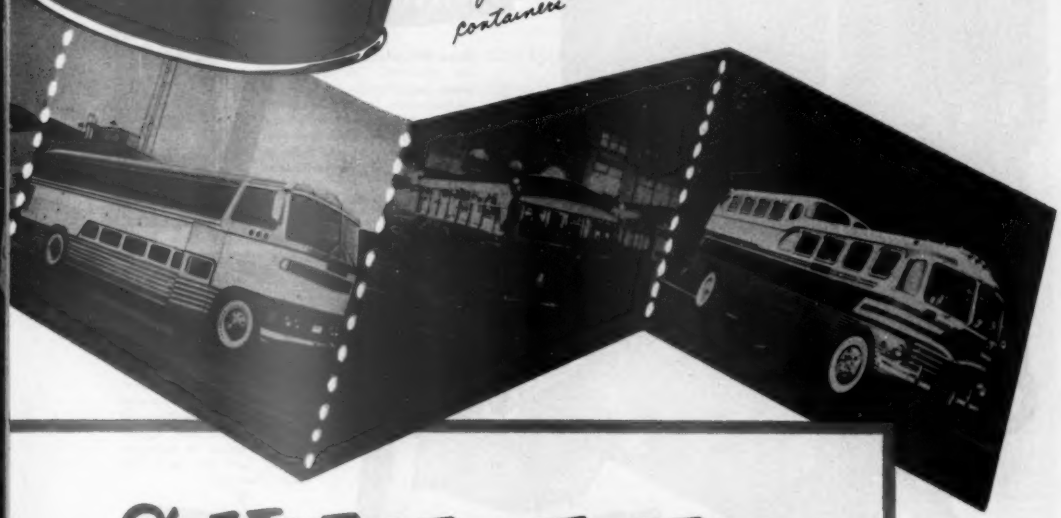
Sinclair TENOL is not to be compared with many alleged "heavy-duty" oils. TENOL is the real thing! You can easily tell if an oil is actually "heavy-duty" . . . See if it is approved under new Military Specification MIL-0-2104. TENOL far surpasses this stringent Government standard!

Save your valuable equipment — phone your nearest Sinclair Representative or write direct to Sinclair Refining Company, 600 Fifth Ave., New York 20, N. Y.



SINCLAIR TENOL
prolongs engine life

Ohmer

AUTOMATIC FARE REGISTRATION *plus* LOCKED VAULT SECURITY

You'll fare better when you have Ohmer Lock-O-Matics controlling transit revenue at the source. Every dime, nickel, penny or token deposited in this box is first added accumulatively into totalizing counters, then dropped into the security of a double locked money vault. When this vault is emptied by your auditor, the totals on the machine's registering counters must match the value of the coins in the box.

No chance for error here . . . and you can gain this protection for a very nominal initial investment.

PROTECTION WHERE IT COUNTS

Three sets of totalizing counters are provided. The upper and lower counters record two sizes of tokens in units. The middle counter adds coins accumulatively into dollars and cents total. Readings are taken at start and finish of each tour of duty for verification of receipts.

Contents of money vault are protected by a dual key system that is virtually tamper-proof. An electric cut-off makes the machine inoperative until vault is locked shut against positive cams. A detector counter adds one each time vault is removed.

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SASH FOR EVERY TYPE OF TRANSPORTATION—ON LAND, ON THE SEAS, IN THE AIR

DOUBLE FEATURES...

These new Flxible Visicoach models offer *the utmost* in visibility—and maximum safety—because they're equipped with Edwards Emergency Exit Sash.

VISIBILITY, SAFETY...

Regardless of the type of bus or service — city, suburban, interurban or cross country — there's an Edwards Sash to fit the requirement exactly. Streamlined construction . . . quick, easy glass replacement . . . less service, lower maintenance . . . rattle-free, weather-tight fit . . . finger-tip opening and closing, and maximum visibility are among the outstanding features of all Edwards Sash. Leading bus builders standardize on it. Profit-minded operators specify it. Write for complete information.

THE O. M. EDWARDS CO., INC., SYRACUSE 4, N.Y.
New York Office — 50 Church St., N.Y. 7, N.Y.

In Canada: O. M. EDWARDS CO. OF CANADA LIMITED
Offices and Plant
335 Laurentian Boulevard, St. Laurent, Montreal 9, P.Q.

EDWARDS SASH

...with Samuel Moore products that never need pampering

● Each product made by Samuel Moore and Company is designed to pare upkeep to the bone. Most will last as long as the average vehicle; all are quickly and easily installed. And each is constantly being improved to give the utmost in performance and safety. Included here are two recent Samuel Moore developments — new Dekoron● stanchions and Rub-Bub Caulk. They are the latest examples of the constant research to keep Samuel Moore products the best in their field.

NEW CAULK WINS IN A WALK over ordinary makes. Rub-Bub Caulk was in development over two years . . . stays pliable indefinitely . . . gives panel joints and frames full rust protection.

NO BREAKDOWNS from hose failure. Rub-Bub Neoprene Flexible Radiator Hose has extra resistance to heat, oils and antifreeze . . . is extra flexible for easy installation.

ACCIDENT CLAIMS ARE LOWER with Rub-Bub Heavy-Duty Safety Aisle Tread. Dri-foot design and dense toothy texture of Rub-Bub synthetic compound make for sure footing at all times.

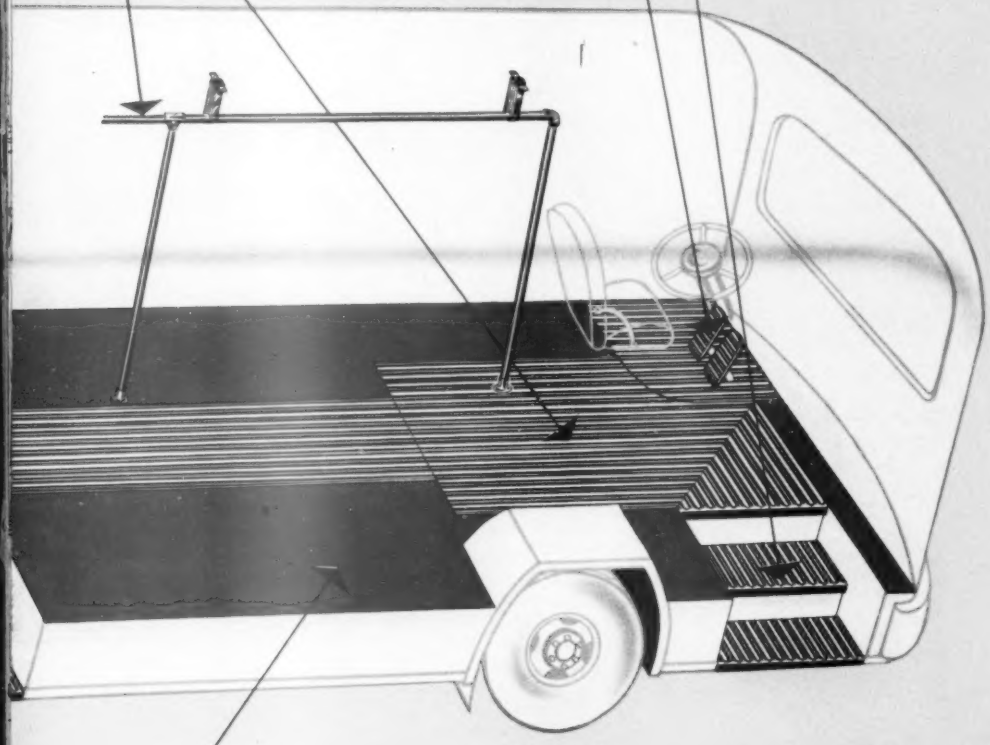
BANS NOISE IN RECORD STYLE. Rub-Bub Underbody Preservative and Deadener dissipates sounds up to 20 times as fast as other deadeners—has exceptionally high rust inhibitive properties.

PLENTY OF DEKORON STANCHIONS spell safety for standees. And now they're better than ever. Improved plastic armor is tougher, ages much better, is even more color-fast.

SURE FOOTING where it's needed most. Rub-Bub Heavy-Duty Pedal Plate has toothy texture and deep ribs that grip shoe soles firmly. Perma-Lok metal backing prevents loosening of the synthetic Rub-Bub compound.

BUILT FOR THE SPOT WHERE WEAR IS WORST. Rub-Bub® Heavy-Duty Safety Platform Plate comes ready to install fast with either wood or machine screws. Lasts the life of the average vehicle.

NO SHATTERED SHIN BONES with Rub-Bub Heavy-Duty Safety Step Plate. Lip and edge contain live rubber that flexes. Double bonded metal backing eliminates broken step edges.



WHAT A BUY—it's never slippery wet or dry! Toothy texture and integral fabric backing make Rub-Bub Safety Smooth Flooring standard in the transit industry.

A-6869

RUB-BUB

Transportation Products

SAMUEL MOORE & CO. MANTUA, OHIO

IN CANADA | SAMUEL MOORE & CO. OF CANADA, LTD.
Represented in Canada exclusively by
RAILWAY & POWER ENG. CORP.

Steering AT ITS BEST

ST. LOUIS CAR COMPANY TROLLEY COACH FOR ATLANTA

ROSS BRINGS EASE . . . AND ECONOMY

ANOTHER OUTSTANDING product of St. Louis Car Company is the trolley coach pictured above, now operating in Atlanta, Georgia. With every convenience and comfort for passengers and driver, plus greater safety and economy, this distinguished coach also features *the finest in steering—ROSS.*

The Ross policy of incorporating advancements in design as they are proved by exhaustive tests has resulted in many recent improvements. Current Ross models have:

(1) ***Increased mechanical reduction*** . . . (2) ***More compactness*** . . . (3) ***Reduction in weight*** . . . (4) ***Greater arm angular-travel*** . . . (5) ***Improved metallugry*** . . . (6) ***Increased efficiency.***

Throughout 44 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

Ross

Cam & Lever ***STEERING***

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

BODY FINISHING
Pays Extra Profits

when you cut
labor costs with
BLACK & DECKER TOOLS!

Labor costs take the biggest bite out of body job profits. So it's plain horse sense to make the most of your mechanics' time with speedy Black & Decker body finishing equipment! Besides the new Feather-Edging Attachment, you have your choice of four B&D Sander models for everything from intermittent service to continuous duty . . . three B&D Polisher models, including the Automatic Polisher, equipped for automatic polish feed.

Every one is perfectly balanced for easy handling, quality-built for extra years of service, designed to finish jobs faster—cut your labor costs—boost your profits! See your nearby B&D Distributor for demonstrations. Write for free catalog to: THE BLACK & DECKER MFG. Co., 619 Pennsylvania Ave., Towson 4, Maryland.

SANDING—the [illegible] with abrasive [illegible] smooth surfaces; [illegible] shows welds; [illegible] to remove rust and rust pits.

LEADING DISTRIBUTORS EVERYWHERE SELL

B&D Black & Decker PORTABLE ELECTRIC TOOLS

POLISHING—[illegible] and [illegible] to clean, polish and blend car surfaces to new smoothness. Improved B&D Polishers have 30% more power—[illegible] speed for fast work and brilliant finish.

FEATHER-EDGING—Use the amazing, new B&D Feather-Edging Attachment with any ½" Electric Sander to prepare body surfaces for repainting. Eliminates nearly all hand sanding. Feather-edges old finishes in 1/5 to 1/2 time of old methods. Gives satin-smooth finish with no danger of deep scratch lines. Quick-acting twist-lock plunger speeds disc changing.

MAKE COMFORT COUNT

Fore and *Aft*

MODEL 235 — *So easily adjusted every driver can have tailor-made comfort to keep efficiency up, fatigue down. Extra rugged for long, trouble-free service.*

MODEL 213

Its proved comfort and rugged construction has made this one of the most widely used seats in city service throughout the country. Note how the exclusive reverse curve of the extra-strong chrome-plated ribbed back pan provides added knee-room for the passenger in the seat to the rear.

Heywood-Wakefield seating puts comfort where it counts—way up forward for the driver as well as all the way aft for passengers.

BE SURE TO VISIT THE HEYWOOD-WAKEFIELD REPRESENTATIVES AT HOTEL NETHERLANDS PLAZA, CINCINNATI, OHIO.

SEE THE HEYWOOD-WAKEFIELD ADVERTISEMENTS "COMFORT IS OUR BUSINESS" in TIME MAGAZINE

HEYWOOD-WAKEFIELD

125TH ANNIVERSARY

Transportation Seating Division
Gardner, Mass.
In Canada—Railway and Power Engineering Corporation, Ltd., Montreal

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW BUSES! BEST IN OLD BUSES!

Look at the NEW AEROCOACH

in 1950 AEROCOACH delivered more 37-passenger intercity coaches than any other manufacturer!

Aerocoach **the coach of tomorrow—TODAY**

P-373

38 great improvements

for rider, driver, maintenance appeal!

for rider

- Greatly increased head room at front entrance and rear seat.
- No seats behind posts.
- Fibreglas glass insulation throughout the bus.
- Increased under-floor baggage space.
- New picture windows are standard.
- Engine and transmission "cradle suspended" to eliminate noise and vibration.
- Available as an extra—four squirrel cage blowers for power ventilation; air circulation is so great that power ventilation can be substituted in some cases for air conditioning.
- New, fashionable decorator-selected interior colors.

for driver

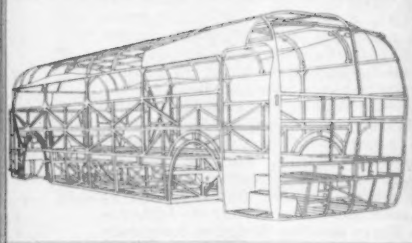
- New, larger 22" "safe grip" steering wheel.
- Swing-out driver's window.
- Four-speed transmission, standard. Means faster get-away, less shifting.
- More powerful, safer hand brake.
- Bigger windshield wipers; better visibility in bad weather.

for maintenance

- Generator, compressor, and other accessories moved to back of engine for instant, easy servicing.
- 15% more radiator efficiency for severest tropic conditions.
- Engine compartment has 4 access doors. No blind spots!
- Chrome-plated brake anchor pins.
- Forged differential case.
- More room for servicing fan belts.
- Longer clutch life through larger clutch.
- Positive cam action baggage door locks.

Plus many more!

These are *just a few* of the 38 new improvements in Aerocoach P-373. Get the complete list. Look them over . . . *Write today for complete specifications.* See the coach of tomorrow . . . ready for you today!



The exclusive Aerocoach all-welded, tubular steel safety framework.

Aerocoach GENERAL AMERICAN TRADE MARK

General American Aerocoach

MOTOR COACH DIVISION

GENERAL AMERICAN TRANSPORTATION CORP.

300 WEST 151st STREET EAST CHICAGO, INDIANA

THEN AS NOW

THE BEST BRAKE IS AIR

BENDIX-WESTINGHOUSE AIR BRAKES
REG. U. S. PAT. OFF.

THE BEST AIR BRAKE IS

Bendix-Westinghouse

The bus business is *big* business today—an industry worth more than $693,000,000—carrying more than 10,878,000,000 passengers while annually rolling up 3,550,000,000 miles! And throughout the years, the nation's bus operators have looked to Bendix-Westinghouse Air Brakes for safe, dependable stops. Today, in keeping pace with this thriving industry, the finest design, research and production talents, working with the most modern laboratory controls and testing devices, assure constant improvements in performance standards, *already the highest in existence.* Every new bus design is completely analyzed from the ground up in order to tailor an air brake system exactly fitted to its load capacity and operating requirements. That's why year in, year out, bus operators protect their investment and their passengers with these mighty brakes. Follow their lead, specify Bendix-Westinghouse Air Brakes—World's Safest power-to-stop.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
ELYRIA, OHIO

The Stop-and-Going's Good with

C-800 OIL

CITIES SERVICE

. . . AND WE QUOTE Mr. E. R. Warkessel, Secretary, Fleischmann's Vienna Model Bakery, Philadelphia:

"We operate . . . 55 trucks and two pleasure cars in the metropolitan area of Philadelphia.

"Much of the work is done in areas in which stops are close together or in heavy traffic . . . with idle time on the motors quite high. Sludge and the attendant evils have been a problem of great concern. We tried various oils, higher range thermostats and other methods . . . but to no avail.

"About two years ago we began to use C-800 heavy duty detergent oil in all new equipment and in motors that were overhauled. Whenever it has been necessary to open these motors it has been gratifying to see the clean conditions prevailing, and in addition the cylinder and shaft diameters have shown a minimum of wear.

"Today our fleet has been brought up to date and we are using C-800 Oil in all of the equipment."

LIKE FLEISCHMANN'S you can find a motor-saving, money-saving, good answer in the complete Cities Service line, backed by technical consultants qualified to study your lubrication problem and help you keep it licked. Write CITIES SERVICE OIL COMPANY, Room 133, Sixty Wall Tower, New York City 5. Or call the Cities Service office nearest you.

Johns-Manville Information Service Bulletin J-M 103

Balancing brakes for best performance and lowest operating cost

THE balancing of brakes is an important servicing procedure undertaken to insure that each brake on a vehicle performs the amount of work it was designed to perform, and does so in synchronization with its companions. The retarding ability of a wheel depends largely on the weight it is carrying. A dual rear wheel supporting twice the load of a single front wheel can contribute twice as much stopping ability to the vehicle.

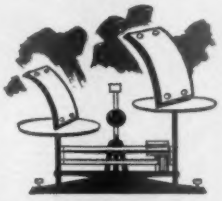
No loafing allowed

There are many reasons why a brake may not be doing all the work it is supposed to do. If one brake is operating properly, while two or three of the remaining ones are loafing, the one good brake will try to do the entire job of stopping the truck. It will become overheated, and may result in heat-checking of its drum, brake squeal, scoring, and many other evils.

If anchor pins are dry and unlubricated, if shoe follower plates are dry, if air chamber diaphragm springs or shoe retracting springs are out of balance with corresponding parts in the other brakes, an unbalance in brake output between wheels is almost sure to result.

Detecting brake unbalance

How can you quickly tell whether brakes are unbalanced, without waiting until a drum heat-checks or one shoe wears out or the vehicle begins to squeal? All friction devices generate heat when they are working: the greater the heat, the more work they are doing. This is exactly the case with a brake system. When a drum is cooler than the others, its brake is loafing on the job. An ordinary surface thermometer, which will read the temperature of any surface it is pressed against, provides a quick check of brake activity. The drums which are coolest are the ones which should receive attention, because they are not operating properly.

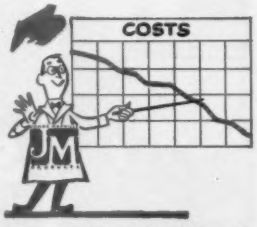


Balance the linings, too

If all mechanical parts are lubricated and in good adjustment and the brakes of one axle still run noticeably cooler than those on the other axle, it is possible to increase the amount of work it does by installing higher friction brake blocks on the cooler brakes. You can increase the difference in the amount of work done between brakes still further by putting a low friction block on the hard-working brakes, in addition to high friction blocks on the easy-working brakes.

The amount of correction possible with different frictions of lining is limited to perhaps 15 or 20 per cent, and may not be sufficient in extremely bad cases of unbalance. Under such conditions, mechanical linkages or air chamber sizes will have to be changed, or hydraulic cylinder sizes must be revised.

Balance keeps costs down



The importance of maintaining correct brake balance cannot be overemphasized from the standpoint of operating cost. There is no important brake trouble you can think of which will not be entirely cured, or at least materially improved, by effecting good balance.

If you would like to know more about Johns-Manville balanced lining materials and recommended maintenance procedures for heavy-duty brakes, ask for your copy of *"The Fleet Reliner's Manual."* Write to Johns-Manville, Box 290, New York 16, New York.

Watch for the next Information Service Bulletin by Johns-Manville, to appear soon in this publication.

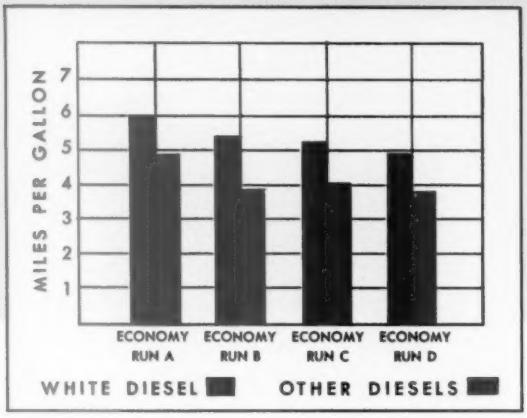
Johns-Manville *Asbestos* FRICTION MATERIALS

BRAKE LININGS • BRAKE BLOCKS • CLUTCH FACINGS

Minimum Savings of per mile

OVER OTHER TYPES OF DIESEL COACHES

with the NEW



Greater in

IMPROVED FUEL ECONOMY IN THE WHITE DIESEL ASSURES SUBSTANTIAL SAVINGS

Look at these typical mileages! They are actual operating records from multiple-stop, congested service... hilly terrain... heavy passenger service. Whites operate on No. 2 diesel fuel for *extra* savings!

GREATEST COACH BODY IN THE INDUSTRY PROVED MOST ECONOMICAL OVER MILLIONS OF MILES OF LONGER LIFE

Built to last for years, the integral White body is really built for rugged wear... easier to maintain. Operating records in all kinds of service prove at least .2 cents savings every mile of service!

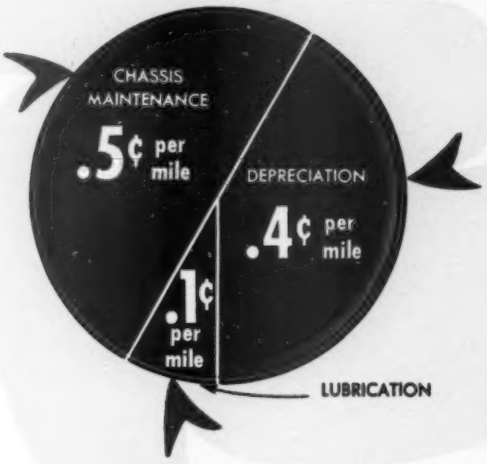
See what this 2¢ means in terms

DIESEL ECONOMY
the New White Diesel

LONGER LIFE IN EVERY FEATURE SPREADS DEPRECIATION OVER LONGER PERIOD . . . TWO YEARS OR MORE

An investment in White Coaches is protected over a longer period of years. Depreciation can be established over 12 years or more. Evolutionary design eliminates obsolescence.

Power plant backed by 100,000 mile warranty . . . entire coach backed by half a century of personalized service to the transit industry.



WHITE ENGINEERING...

Attention to every detail . . . properly mates power plant to coach units

Carefully and completely engineered by real craftsmen in the transit industry's most modern manufacturing plant, White Coaches maintain exacting quality standards—built to exact customer specifications and operating conditions.

MILES MORE WITHOUT ADDING OIL

Economy runs tell an amazing story of low lubrication costs. Much greater mileage without adding oil. All units completely sealed . . . economical . . . clean!

of YOUR business... YOUR mileages

Let WHITE Prove These Facts by a Demonstration in Your Service

Feature for Feature
The WHITE DIESEL COACH
Adds a New Economy Factor
for Transit Service

Longer Life Connecting Rod

32% Greater Bearing Area

Typical of WHITE QUALITY and ECONOMY

FEATURE	WHITE DIESEL	COACH A	COACH B
Bore & Stroke	5⅛ x 6	4⅞ x 5	4⅞ x 6
Horsepower	200 at 2100 RPM	200 at 2000 RPM	165 at 2000
Compression Ratio	15.5 to 1	17 to 1	14.6 to 1
Weight	2200	1760	1837
Governed Speed	2100	2000	2400
Crankshaft Diameter	100% 4½"	78% 3½"	89% 4"
Crankshaft Weight	100% 304	53.5% 163	68% 203
Bearing Area	100% 61 sq. in.	86%* 28 sq. in.	68% 41.2 sq. in.
Connecting Rod Projected Area	100% 7.44	66% 4.9	75% 5.6
Wrist Pin Diameter	100% 1.99	75% 1½	81% 1⅝

* Two cycle engine. Direct comparison not fully informative.

The larger diameter of the crankshaft means greater strength and longer life than A and B in the same service.

Larger Diameter Crankshaft

100 lb. additional weight in the White shaft means again longer life, greater factor of safety, when performing the same operations as coaches A and B.

The difference in bearing area in favor of White of approximately 32% over B again means longer life between overhauls.

The same increased capacity story on White is true of connecting rod bearings, always an important factor in governing life between overhauls.

White BUSSES

In every feature, the White Diesel establishes low cost operation far beyond that accepted as outstanding in the industry. Find out today how White Diesel can provide *savings of at least 2c per mile*... in Your Service!

THE WHITE MOTOR COMPANY • COACH DIVISION • 1455 E. 185th ST., CLEVELAND 10, OHIO

BUS TRANSPORTATION

TOP TOPICS

HIGHLIGHTS OF LAST MINUTE DEVELOPMENTS IN THE BUS INDUSTRY AS WE GO TO PRESS

September, 1951

1952 REQUIREMENTS CALLING FOR 7,000 VEHICLES FOR THE TRANSIT INDUSTRY have been presented to Administrator Knudson of the DTA by the American Transit Association. Said ATA Executive Manager Guy C. Hecker: "(Our) report outlines the essentiality of the transit industry, its World War II experiences, its efficiency in conserving critical materials and its vehicle purchase policies."

THE ESTIMATE OF 7,000 VEHICLES "is based upon minimum replacement requirements and, in the event of any emergency that would greatly restrict the use of automobiles, that figure would of necessity have to be substantially increased." The breakdown, by types: rapid transit cars, 300; streetcars, 100; trolley buses, 400; and motor buses, 6,200.

CMP GOES INTO FULL EFFECT by Oct. 1, and small users figure to have less red tape trouble from then on. An "SU" (for small user) symbol, will act as a CMP allotment for steel, copper, or aluminum. Civilian industries presumably will get as much metal as the defense program will stand. As now geared, the defense program is designed to keep civilian production moving, not slowed down. Meanwhile, though, demands on copper seem likely to make it a scarce metal.

BUT SUPPLIES OF ALUMINUM AND STEEL SHOULD RISE, according to expert estimates of the situation. Sheet steel and aluminum ought to be fairly plentiful by 1953 if the plan to remove production controls goes ahead. The big question mark, as usual, is the future pattern of the arms program. If it keeps going up you can throw all the plans away.

DRASTIC INCREASES IN 1952 OPERATING COSTS will result if the 1951 Revenue Bill goes through as proposed. Now being prepared by the Finance Committee of the U.S. Senate, it calls for a federal gas tax of 2 cents (now 1½); diesel fuel tax of 2 cents (now nothing); and a sales tax on buses, parts and accessories of 8 per cent (now 5 per cent).

REQUESTS FOR A REVISION OF THE BILL are in order, citing the heavy increases in operating costs for 1950, operating deficits, insufficient revenues and urging the exemption of regular route bus companies from these increases. Senator Walter

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F. George, chairman of the committee, is the one to advise on these points.

JUST ELECTED TO THE ACF-BRILL BOARD OF DIRECTORS are George E. Allen, Ralph F. Peo and Paul E. Reinhold. Mr. Allen is a director of Avco Manufacturing Corp., Republic Steel Corp., and Penn Mutual Life Insurance Co. Mr. Peo is president of Frontier Industries, Inc., and Manzel, Inc., and a director of American Bosch Corp., Arma Corp., and Fairmount Tool and Forging Co. Mr. Reinhold is president of Foremost Dairies, Inc., and a director of Eastern Airlines and the Federal Reserve Bank of Atlanta.

CHARLES A. HIGGINS, JR., has been named a consultant on private carrier matters for the Defense Transport Administration's Street and Highway Division. Mr. Higgins, vice president of the R. S. Robie-U-Dryvit Auto Rental Co., Inc., was educated at Clark University and Harvard Graduate School of Business. He is a native of Worcester, Mass.

TRANSFER OF CONTROL of the Indiana Railroad (Division of the Wesson Co.) to two Chicago bus operators took place early this month when R. D. Kramer and C. J. Villeneuve took over, with ICC's blessings. The two also operate DeLuxe Trailways, Southeastern Trailways and Greenville-Dayton Transportation Co.--Indiana Railroad operates city service in Anderson, Muncie and Richmond, Ind., and intercity service serving Terre Haute and Fort Wayne, Ind., and Louisville, Ky. It will probably be incorporated into the National Trailways Association.

INCOME WAS DOWN for National City Lines for the six months ended June 30, compared with the same period of 1950. But it wasn't down very much. Operating revenues were up to $15.5 million from $14.5 million, operating expenses were up to $13.9 million from $12.9 million. Net income for the big transit holding company for the January-June, 1951 period was $1,187,682, compared with $1,228,133. Earnings per common share, on 1,394,563 shares outstanding, after providing for dividends on preferred stock: this year, 82 cents; last year, 84 cents.

THE OLD STORY OF COSTLY DELAY in processing fare applications is pinching Los Angeles Transit Lines and Pacific Electric Railway. Both have filed fare-raise applications with the State Public Utility Commission, then an amendment seeking action "on an interim basis."

THE PATTERN IS FAMILIAR: original fare application dated April 20; no date for hearing set as yet. Meantime, of course, the companies suffered. LATL was forced to cut service; PE showed a deficit of nearly $2 million on passenger business for the first half of 1951. At the hearing last fall the PUC estimated LATL could only earn 2.25 per cent on the value of its assets, admitted this was not enough.

Top Topics

A 44-HOUR WEEK FOR NEW YORK TRANSIT WORKERS goes into effect the first week of October. Now on a 48-hour week, 21,000 workers in bus maintenance, car maintenance and other departments of the municipally-owned system will gain the shorter week. Meanwhile, transition to the 44-hour week for bus, trolley and rapid transit personnel is in progress. All employees not on a 44-hour week by Oct. 1 pick up a bonus for all hours worked over 44 between Oct. 1 and Jan. 1.

IT'S ALL PART OF THE MOVE, recommended by the Mayor's Committee, designed to bring the 40-hour week, in gradual stages, to transit workers by some time next year. Seven unions, including Mike Quill's TWU, have signed an amendment setting forth these proposals.

FIVE NEW JERSEY LINES WON FARE INCREASES when the Public Utility Commission approved a temporary 10-cent zone fare for Olympic Bus Lines, Inc., Wallington; Consolidated Bus Lines, Inc., Clifton; Garfield-Passaic Bus Co., Garfield; and Passaic-Athenia Bus Co., Inc., Clifton. The Garfield-Passaic Transit Co., Garfield, received authority to charge a nine-cent fare.

PUC SAID THE INCREASES for the independent lines were approved to provide "temporary emergency relief" for the lines. The board said study of the applications showed that a financial crisis exists on the lines "which threatened continuance of safe, adequate and proper service."

THANKS TO A FARE INCREASE, the New York City Omnibus Corp. was in the black for the first six months of 1951. The Omnibus Corp., and two of its subsidiaries, Madison Avenue Coach Corp. and Eighth Avenue Coach Corp., announced a profit of $605,929 for the first half, against a loss of $53,364 for the same period last year. During the first half of last year, the fare was eight cents a ride instead of the present 10 cents. The 10-cent fare went into effect Jan. 1, 1951.

STUDIES OF BUS ROUTES to create turn-around space at the end of runs are included in the 22 proposals to ease New York City's "hardening of the traffic arteries." As put forth by Hugo E. Rogers, special counsel to the Department of Traffic, the proposals also include provisions for the removal of the Third Avenue trolley tracks, widening of the roadway and possible conversion of the El structure to a four-lane road.

AUTO FACTORY SALES ARE DOWN, according to the Automobile Manufacturers Association. Factory sales of new motor vehicles in July was 492,311, lowest volume in more than 18 months. As reported, July marked the first time since February, 1950, that factory sales fell below the half-million-units-a-month level. The July total included 381,407 cars and 110,904 trucks and buses.

In the Face of Many Problems

● *"Present-day business conditions are affecting the riding habits on bus lines throughout the country . . . generally speaking, revenues are decreasing and many lines find it increasingly difficult to earn an interest on investments . . . The more the fare problem is studied, the more apparent it becomes that carriers must fix rates according to predetermined traffic volume . . . The public must be apprized of the tremendous advantages of bus travel . . . Sales promotion programs must be designed to attract new business and hold the old."*

● The above quotation is from an editorial in the first Convention-In-Print issue of BUS TRANSPORTATION published in September 1931. And now two decades later in our 20th Annual C. I. P. issue these words again aptly describe a set of problems which the industry faces today. Problems which will be discussed on the programs at the coming annual conventions of the two National Associations—the Silver Anniversary meeting of the National Association of Motor Bus Operators at Chicago and the 70th Annual Convention of the American Transit Association at Cincinnati.

● These current industry problems also are expertly discussed in this issue by people well-qualified to do so. Just about every basic industry problem gets a going over. And we have been fortunate in lining up top-flight experts in both the intercity and transit fields to discuss them in forthright fashion. Whatever your particular problem or concern may be, the editors believe that you will find it dealt with in the following pages. You may not get all the answers, but you will get fresh, new viewpoints and added light on subjects of vital interest to industry management.

THE EDITORS

THE EDITORS OF BUS TRANSPORTATION PRESENT

The 1951 CONVENTION *In Print*

• Throughout the next 34 pages, top level intercity and transit bus executives discuss bus industry problems in relation to rising costs, decreased riding, manpower and material shortages and regulatory problems, together with the need for higher fares, better merchandising of the ride, and improvements in service.

INTERCITY TOPICS

• On the following page, Arthur M. Hill, president of NAMBO, sets the stage for an analysis of the major problems facing intercity carriers, with a panel of key intercity executives contributing their individual views on following pages.

TRANSIT TOPICS

• On page 58, H. L. Bollum, president of ATA, opens the panel discussion on transit problems, supported by the views of key transit executives.

1951 BUS SHOW IN PRINT

• A special section which presents the latest models of bus equipment, begins on page 76.

What Can We Do About . . .

. . . Manpower? – *it's getting scarce!*
. . . Materials? – *supplies are tighter*
. . . Riding? – *it's falling off*

By ARTHUR M. HILL • President, NAMBO

With practically every intercity carrier faced with one or more of these problems, Mr. Hill's discussion sheds some light on the many uncertainties facing the industry today.

THE MANAGER of an intercity bus company today finds himself confronted with a situation that is almost unique in the current business climate. With almost every conceivable type of business indicator—volume of production, national income, wage payments, and even volume of passenger travel—showing repeated new highs, he sees his passenger count barely holding its own at best, his expenses steadily rising and his margin between revenues and expenses practically at an all-time low.

At the same time, along with other business men, he is vexed by all of the troubles of the times including material and labor shortages together with a steady expansion in governmental controls and red tape. To this must be added the serious responsibility which our industry has in maintaining itself in condition to perform its function as a vital part of the national system in any emergency that might arise.

The total 1950 volume of all passenger travel, estimated at something more than 475 billion passenger miles, set a record not even approached in the past. But the problem of the common carrier lies in the fact that about 88 per cent of this travel was by private automobile. The 1950 total volume of intercity bus travel was nearly a fourth below the 1946 figure. It follows that the number one problem of the bus manager is that of finding ways to increase his revenues.

Methods of selling transportation and attracting more passengers have been principal subjects of discussion at most intercity bus meetings, and every issue of the trade journals has one or more articles on the subject. Such devices are vitally important and must be explored and tried thoroughly and continuously. We must not, however, overlook the fact that the intercity motor bus industry cannot alone resist the current inflationary pressures. That important fact must be faced.

Load Factor Key to Improvement

The prices paid by consumers for the necessities of life rose 32 per cent between 1946 and June 1951, the latest figure available as this is written. Over the same period, the cost to the average Class I intercity bus operator of transporting a passenger one mile rose 36 per cent. But the fare charged that passenger went up only 16 per cent, exactly half as much as the average for consumer prices.

As of today, the most recent operating data are those for the first quarter of 1951 as compared with the corresponding period in 1950. There is some slight encouragement in the estimated rise of about 5 per cent in passenger miles. At the same time, vehicle miles were increased by about half this amount; together with some fare increases this produced a slight increase in revenue per bus mile. During this same period, however, the

● If any one man could be said to be the "voice" of the intercity bus industry, that man is Arthur M. Hill. In a long and distinguished career of service to the bus industry, he has won a degree of confidence and respect from his fellow members in the industry seldom accorded any leader. The fact that he was the first elected to guide the destinies of NAMBO when the organization was formed in 1926, and that he has been re-elected president every year since, is merely one attestation to the quality of his leadership.

As an operating bus man, Arthur Hill began his career shortly after the end of World War I. In 1924 he organized a group of intercity carriers operating in West Virginia. The climax to his career came when many of these carriers were merged into the new Atlantic Greyground Lines, and Arthur Hill was named its first president. Today he serves as chairman of the board of Atlantic Greyhound. In addition, he is a member of the board of directors, and chairman of the executive committee, of the parent Greyhound Corporation.

Despite a busy career in the transportation field, Arthur Hill has found the time to respond to the call of the President of the United States to serve his country in high governmental posts during both World War II and the "Cold War" emergency during the last few years.

earnings of employees (and, consequently, labor costs) rose sharply—almost eight per cent in the case of earnings of drivers. To offset this heavy added cost, further cuts in non-operating personnel were necessary, and the increase in average expenses per bus mile was held to a little more than three per cent.

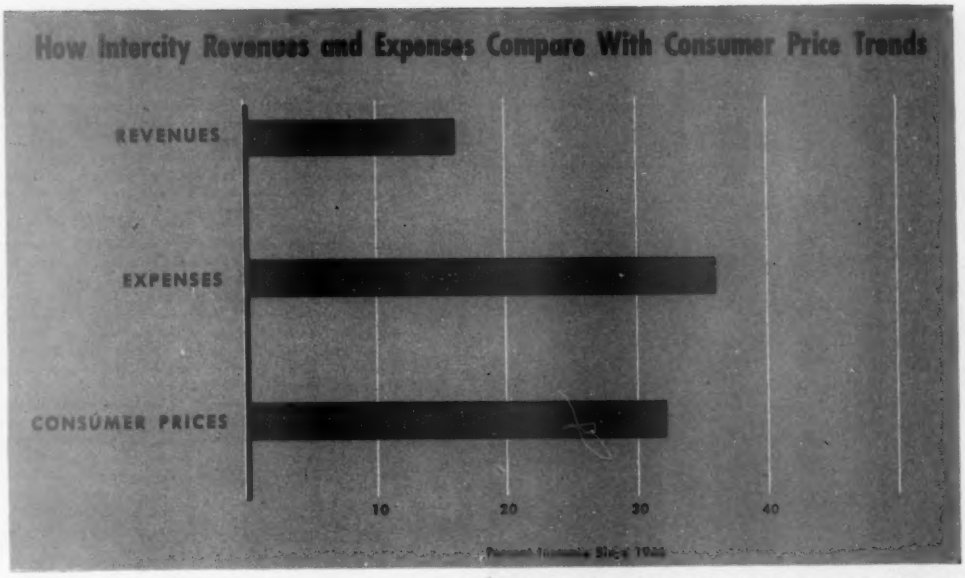
The industry has about exhausted the possibilities for economies of this sort. Every effort must be made to increase our load factor substantially. Unless this can be done, we cannot be expected to hold the price line as to our fares in the face of operating ratios already higher than can be borne without incurring the risk of impairing the industry's financial stability.

This conclusion is further emphasized by certain other elements in the general economic situation. The eight per cent rise in driver costs over last year continues at what appears to be an accelerating rate. Up to this writing, the effect of the wage stabilization program seems to have been primarily an upward pressure. The so-called "10-per cent catch-up formula," originally applied to the items on which total employee compensation is based, has already been liberalized to remove important fringes from this restriction. This relaxation could easily add two or three more percentage points to bus labor costs and it is virtually certain that further breaks in the stabilization line will occur before this article appears in print.

This inflationary trend is naturally accentuated by scattered but increasing manpower shortages. A recent NAMEO check showed that more than half the representative sample of carriers were experiencing manpower shortages. In the case of drivers, these carriers reported shortages amounting to 12 per cent of their total driver forces. One carrier reported that it was necessary to work three-fourths of the drivers overtime; the effect of such a situation on labor costs is obvious.

Federal Policy Affects Situation Greatly

There are two aspects of Federal policy which can greatly aggravate or ease this problem depending upon which approach is used. The first has to do with wage policy (assuming the continuation of some sort of stabilization procedure). Under a mobilization program there is always constant pressure, particularly from defense plants and the military, to channel the flow of manpower by means of manipulation of wage stabilization policies and procedures. The inevitable results are: (1) a depletion of the labor force of defense-supporting industries such as transportation for the reason that they cannot, because their rates and revenues are regulated, compete with defense plants on wage offers; (2) a tremendous increase in the cost of the defense program because of the rise in labor costs resulting in higher



COMPARED TO A CONSUMER PRICE RISE OF 32%, PASSENGER MILE COSTS ROSE 36%, BUT FARES ROSE ONLY 16%.

taxes; and (3) a general breakdown of the stabilization program. It is earnestly to be hoped that this hazard can be avoided.

The second problem has to do with manpower policy itself. During World War II most segments of the national transport system received utterly inadequate consideration of their manpower problems. At the outset of the present mobilization program, there were indications that this serious error might be repeated. I hope that the steps that have been taken may help to avoid that contingency.

Many Uncertainties and Unknowns

It has been my privilege to serve as the transportation management representative on the Labor-Management Policy Committee which serves as advisor to the Director of the Office of Defense Mobilization and to the Secretary of Labor on all major questions of manpower policy, whether they are civilian or military. In addition, each of the 13 regional committees and the many area committees already established wherever serious problems have arisen also contains a representative of transportation management. These committees deal with specific local problems and advise the directors of the public employment services and other public officials in connection with them.

Many representatives of the bus industry along with other representatives of transportation management, are serving on these committees, and every operator should become acquainted with his representative and lay the foundation for a cooperative relationship. It has been agreed that the transportation management committee member in each case will represent all forms of transportation.

These two problems—that of increasing revenues and the situation with respect to labor costs and manpower—are, in some degree, especially applicable to the intercity bus industry for the reasons which I have suggested. Like most other business enterprises, we are also having our troubles with material shortages. This situation is a peculiarly difficult one because of the many uncertainties and unknowns. The military procurement program is exceedingly difficult to plan, for those responsible cannot predict accurately either the extent or the type of mobilization that may be required. The requirements, in terms of materials, for a program in which the principal emphasis is on air power are quite different, for example, from those involved if the program were primarily naval or if it consisted mostly of equipment for land forces.

In consequence, there is similar uncertainty as to what and how much remains for defense-supporting industries and the civilian economy. Many of these uncertainties will of necessity remain until there is some clarification in the international field and until it is possible to plan production programs with more assurance. In the meantime, it is hoped that the agencies responsible for the allocation of materials will be able to achieve a better integration as to policies and procedures, as further experience is gained, in place of the present necessarily improvised system of controls wherein important activities, to which critical materials have already been allocated, are often held up for the lack of a few small items of some other sort.

We in NAMBO are attempting to keep abreast of these and other problems that affect our industry. To be effective in working out solutions requires the close cooperation of the operating companies. I urge that NAMBO be informed promptly of difficulties related to mobilization and other national regulations.

How to Get That Extra Revenue Dollar

By Robert F. Thompson • *President*
Vermont Transit Company, and Burlington Rapid Transit Company

BY THIS TIME one thing is obvious to every intercity bus carrier: in the face of higher costs we have to find ways and means to put more money in the till. Just how do we go about this? Well, we have to give consideration to increasing fares, and most of us have done so. Certainly, we should continue to devise fare structures (for both short and long haul riders) which are consistent with today's cost picture. But the fare boost, as I see it, is not the only answer to the situation.

It seems to me that we should be realistic at this point, and admit the fact that certain types of traffic are declining and that some of this traffic is probably lost forever. And I think that many of us have made the mistake (or are apt to make it) of concentrating too much attention on raising fares and not enough on finding other means of raising revenues.

Everyone recognizes that the passenger car is our biggest competitor now, and will continue to be. And the passenger car has hurt us most on relatively short haul riding. In our own operation, at any rate, we have not been hit nearly as hard in the loss of 200-mile passengers as in those going 15, 20, or 25 miles. It is just about here—around 20 miles—that the car bite really begins to hurt. Formerly we got a good part of our revenue from "on-and-off" passengers. We haven't lost much through business, say, on the Boston-Montreal run. But we have lost the short-haul rider on that run in large numbers, the kind of passenger who got on in a rural area and rode 15 or 20 miles to the next shopping center. That passenger, of course, is now going to town by car. And he or she will probably keep on doing so.

All this leaves us faced with the necessity of making up from other sources this revenue lost on short haul riders. And what are these sources? I would say that the problem has three phases, involving ways to (1) get more passengers in our present riding pattern, or at least stave off further riding decline; (2) get more business by expanding our existing riding pattern, that is by getting a new type of passenger on the same bus trips; and (3) use our imagination to initiate and develop the operation of new types of services, particularly in the charter, special, tour and excursion fields.

On the first point, keeping our old market, the key consideration is improved service. Modern vehicles, attractive terminals and efficient maintenance shops are fundamental necessities. However, these alone cannot do the job. There must be, in addition, a friendly smile and a sincere "extra" effort to make the passenger feel welcome. And then there is the little but very important matter of clean rest stops.

How pointless it is for a carrier to pay around $30,000 for a new bus, spend more money to advertise his service—and then fail to provide satisfactory rest stops. What's the use of getting a customer all pepped up over the service if you're going to let him down at the very first stop. Much has been done, of course, in the way of providing clean, attractive facilities. But I think a lot more could be done. The problem won't be solved simply through tile walls and floors. It takes the everyday soap and water routine to have them mean anything.

Pushing the All-expense Tour

Now, on the second point, getting a new class of traffic on the same bus trips. You may have, say, six or seven seats to fill which formerly were taken by short haul riders. And one way to fill them is by having all-expense tours on tap. This type of tour, of course, is not a conducted one. It's an expense-paid tour but unescorted and good on any regularly scheduled bus to the city or spot indicated. A customer may walk into your office and inquire about a trip to New York. You can then offer

"THERE ARE STILL PLENTY OF PEOPLE WHO WILL TRAVEL, IT'S OUR JOB TO GIVE THEM GOOD REASONS WHY THEY SHOULD."

him a choice of several tours which include the trip, entertainment, and hotel accommodations. And he can take any regularly scheduled bus he wants. This device, needless to say, is by no means new, but I don't think the industry has pushed it for what it's worth. Arrangements with hotels, nightclubs, etc. are easily made, and the passengers gained can fill the seats (or some of them anyway) vacated by the pull of the passenger car.

Selling the Demand for Transportation

All-expense tours, of course, are but one way to attract new traffic. You can sell tickets, with hotel reservations, to ball games, fights, spectacles of all kinds that figure to draw. Any of these provide the chance to give the customer a package: travel, entertainment, and accommodations. Actually, in our own operation, we sell tickets for events alone, if that's the way the customer wants it. This doesn't do us any good for the moment, but it provides a service to a potential customer and, as a good-will gesture, it may pay off later.

● **ROBERT F. THOMPSON,** president of Vermont Transit Co. and Burlington Rapid Transit Co., has been prominent in the intercity field for many years. Following his graduation from Dartmouth in 1934, Mr. Thompson joined the staff of Vermont Transit Co. and Burlington Rapid Transit Co. In 1940 he was named traffic manager of the two companies. Two years later he became vice president in charge of traffic, and he has been president of both companies since 1947.

Mr. Thompson has been a director of the National Bus Traffic Association, and has been active in serving on various committees dealing with tariff matters.

Developing this kind of business, naturally, depends on some promotion in the form of folders, working with travel bureaus, taking newspaper space, using direct mail, and so on. Along with this, it's a good wrinkle to keep a list of passengers to a particular event. Then, when that event turns up again, let them know you're ready to serve them as before. Whatever means of promotion you use, it will be well worthwhile. You can run a good service, with reasonable fares and other attractions, but you've got to let people know there's a reason for going somewhere. In other words, if we're going to sell transportation, we've got to sell the demand for transportation.

Servicing the Long-haul Rider

Another means of building traffic within your existing riding pattern is by improving through coach operations. Certainly the bugaboo of changing buses is one of the greatest deterrents to travel. Vermont Transit put through buses into effect on its New York-Burlington run back in 1935, and we found it paid off immediately. There are, of course, some details to iron out in one line renting buses from another, for instance, but they aren't particularly complicated and the arrangement is more than worth any trouble it entails. Also, the through service means practically no increase in operating costs, and what slight increase there is is more than repaid in terms of greater appeal to riders. Some time ago, it's true, there was some questioning of the arrangement by regulatory bodies. But this attitude changed when it was demonstrated that through buses were a definite improvement in service.

Still another matter worth mentioning here is the development of limited and express service for the benefit of long-haul riders. Some routes, obviously, don't lend themselves to this. But, when possible, the long-haul passenger should not be badgered by frequent stops. This is not to discount the value of the short-haul rider. I'll explain by citing an instance of our putting this into effect. We found on our summer Boston-Montreal service that we were frequently running two sections, each carrying both long and short-haul riders. This being the situation, we took the opportunity to split our patronage into local and limited buses. This satisfactorily serviced the important short-haul rider and, as well, gave the long-haul customer improved service. As a result, we not only were able to sell limited tickets at a slightly increased rate, but we also attracted more long-haul passengers.

The Cooperative Tour Potential

So far I've discussed some of the methods of gaining business within the framework of the carrier's existing operational setup. Now, what can carriers do in the way of starting a new type of service? We learned one good answer to this question last year when it was found that tours operated cooperatively on a "one-bus" plan have tremendous possibilities for additional revenue. This plan entails bringing several franchised regular route carriers together to operate a special bus, so that passengers can travel without change over the routes of the several carriers on a specially devised tour itinerary.

The first such attempt was made last summer as a seven-day escorted New England tour, sold by the American Express Company *(Ed. note—see Feb. B.T., page 43)*. Transportation for the tour was handled by 12 regular intercity carriers over their own connecting franchised routes. From mid-June through mid-October, 489 tour passengers paid $149.50 each for a 1,193-mile New England junket that originated in New York City every Sunday for 17 consecutive weeks. Several of the mid-season tours were so popular that it was necessary to run extra sections. In all, 21 buses were needed to carry the 489 tourists. Buses used were 29-passenger coaches and carried a season average of 23.2 passengers per trip. Despite the skepticism in some quarters, it added up to such a success that the tour program has been expanded this summer.

This tour proved a number of things, notably that connecting and even competing carriers can easily coordinate special services over their respective routes and interchange equipment to the profit and advantage of all. Special tour movements of this type provide a means of capturing a large share of valuable traffic which otherwise will go to non regular-route carriers, who would solicit only the cream traffic and leave the skim-milk to the regular route industry.

Actually, though it has been overlooked by some carriers, this type of tour probably offers the greatest opportunity for a new, lucrative service that the industry has. The gross revenue realized by the 12 intercity carriers from this one tour last year was $15,513. When you consider that there are some 200 similar tour possibilities throughout the country, it's apparent that the cooperative scheme has enormous significance for the whole industry. Multiply $15,513 by 200 and you have $3,102,600. Furthermore, the popularity of such tours should progress naturally. As more and more people get the habit of taking these tours, they will necessarily look for tours in different territories. Right now it may not interest a particular carrier that a cooperative tour is planned for Mexico City. But eventually those same passengers may look for tours in his part of the country.

What's Your Association Doing? Keep the industry posted on the important developments in your area through the Association News section of BUS TRANSPORTATION.

Send us your convention programs, copies of speeches and technical papers—and good convention photographs. To insure up-to-the-minute coverage, please get all copy and photos to Association News, BUS TRANSPORTATION, 330 W. 42nd Street, New York 18, N. Y., by the fifth of the month . . . earlier if possible!

The cooperative tour is a standout example of a new service. But there are many ways for the individual carrier to exploit the particular area in which he operates. We have found, for instance, that there is a considerable market for running special buses (going over regular routes but specially scheduled) to all sorts of special events in Boston, Montreal and other points. And these special events can cover a surprising range of interest. A special bus to the Ice Show in Montreal is an obvious one. But we even run a bus to the Flower Show in Boston, because we have an active garden club here. Then, in our section, there is great interest among farming groups to take trips of various kinds. Again, on one occasion, some 36 women (who love bus trips generally) took a trip from the small town of Milton, Vt. to a furniture factory 150 miles away.

Many more examples of this sort of business can be cited, much of which came to us only as the result of active solicitation. The point, of course, is that there is a great deal of special business waiting to be picked up in unexpected quarters. And most of us probably haven't scratched the surface of its possibilities.

Local advertising, naturally, plays a big part in putting these special services across. And we feel now that the specific message, rather than the general, has the most impact in newspapers and radio. The bulk of our radio advertising now consists of singing commercials, slotted between daytime serials and followed by specific announcements. We once sponsored a local evening show but switched to daytime radio because about 70 per cent of our customers are women.

Inexpensive Promotion Devices

Along with mention of these routine channels of promotion, it's worth noting that there are some simple, inexpensive ways to push your service by tying in with hotel and resort publiicty. Most hotels will gladly include a folder on your service in the publicity package they send to prospective guests. And city Chambers of Commerce will cooperate in the same way. All you need to do is furnish the folders, and the complete handling is taken care of for you.

By way of conclusion, I'd like to stress that I have not intended to pontificate on how the industry should merchandise its product. I am merely passing along some impressions gained from our experiences (good and bad) which may have pertinence to carrier operations in general. As I view it, it pretty much boils down to this: there are still plenty of people who will travel; it's our job to give them some good reasons why they should.

"Intercity bus companies find themselves squeezed between the necessity to keep costs down and the necessity to provide adequate and efficient terminals. . .

"It is only logical that the greater volume of business flowing through a union terminal enables ticket agents to keep busy, to produce more sales volume. . .

The Union Terminal . . . Modern Business Builder

Small, isolated intercity terminals cause inconvenience to the public and sometimes have given the industry a black eye. "The obvious solution is through the medium of the union terminal," this authority says.

By Lee C. Webb • *Superintendent*
New York Port Authority
Union Bus Terminal

ONE OF THE MOST troublesome and expensive problems confronting the intercity bus industry is that of the terminal facility. The problem is not a new one. Instead it has haunted the industry since buses began to roll. Naturally, the problem of any individual intercity company increases in proportion to the number of cities served. The problem is composed of two principal parts: (1) construction and operating costs and (2) service and convenience to the public, including the terminal's contribution to attracting new business.

Intercity bus companies find themselves squeezed between the necessity to keep costs down and the necessity to provide adequate and efficient terminals. Upon the one hand, terminal costs have risen steadily during the past several years. Upon the other hand, public demand for improved terminal facilities has increased steadily. Add to these factors the fact that municipal governments have become more and more concerned about the problem of street congestion and the bus contribution to the problem.

In taking a serious look at the problem of keeping costs down and standards up, one is inevitably confronted with the question of the union terminal versus the individual terminal. In the early years of bus transportation, intercity bus carriers followed the lead of older forms of transportation and established individual terminals. This was a natural phenomenon, anyway, as bus men were rugged individualists. In addition, bus lines were more highly competitive with other bus lines, and less competitive with other forms of transportation then than now.

In recent years as the industry grew up, many forces have been pressing towards union terminals. The principal forces already have been mentioned. They are, namely: cost, the need of better terminals, and pressure for relief of street congestion. The latter was the principal factor that caused New York to advocate a union terminal. The result was the Port Authority Bus Terminal in midtown Manhattan.

Union Terminals Benefit Everyone

As superintendent of that terminal, the writer has had an opportunity to observe at first hand the results of placing more than a score of separate bus operations under the same roof, subject to a common and impartial information center. It is my belief that the general satisfaction expressed by the traveling public and by the bus lines, with the operation of this major union terminal, will tend to influence the industry toward more union terminal operation.

The bus industry is a highly competitive one in spite of Federal and state regulatory measures. The consensus of the industry in the past has been that competitors did better by placing as much distance as possible between themselves. It appears, however, that in the single state and in the several municipalities where union terminals are mandatory, the carriers have not suffered and, in fact, may have benefitted. The same can be said for some noteworthy instances in which competitors voluntarily have joined forces to operate union terminals.

Carriers of All Sizes Terminal-minded

The average city in America is served by two major long haul carriers and by a number of short haul or short-long haul carriers. Carriers of all sizes have become terminal-minded in recent years. The result is that each of the two larger carriers usually manages to erect its own fairly modern and adequate terminal. The smaller carriers usually find themselves relegated to inadequate terminals. Large and small operators alike are subjected to excessive terminal costs.

The obvious solution is through the

"I would be naive, indeed, if I attempted to convince anyone that there are no major obstacles. . .

medium of the union terminal. Here a single organization can handle sales, information, baggage, and terminal maintenance problems. It is only logical that the greater volume of business flowing through a union terminal enables ticket agents to keep busy, to produce more sales volume per man day, and to become better trained in their work than would be possible in an individual terminal.

Concession Revenue a Big Plus

Few individual terminals can foster a sufficient volume of traffic to permit the employment of a trained information force. Yet such a force, when justified, lifts a time-consuming chore from the shoulders of the ticket sellers, permits greater specialization and training in both categories. This results in dollars saved for the terminal management and in more efficient, speedier service to the patron. The same line of reasoning applies to the baggage handling force to an even greater degree. There is no way to prevent peaks and valleys in the baggage man's working day. Certainly the union terminal, with its greater frequency and diversity of service is in a more favorable position to prevent overstaffing to meet peak hour demands, than is any smaller terminal. As for terminal maintenance, the advantage of the union terminal lies in its ability to more fully utilize the time and skills of the force.

Further, the union terminal, owing to its size and coverage, offers a definite advantage for obtaining concession revenue. This factor has been grossly neglected until recent years. With proper planning, concession revenues should be made to defray from 50 to 70 per cent of the terminal cost. Well chosen concessions have the added attraction of being a convenience to the traveling public.

It might be interesting to note at this point that the concession revenue percentage for 1951 at the Port Authority Bus Terminal has already exceeded expectations. More than $800,000 in concession revenue will be taken this year to help defray operating expenses of the terminal. This revenue comes from more than 40 enterprises, representing a large variety of businesses ranging from food stores to a dentist office.

Union terminals are usually greeted with open arms by the city fathers as an aid to the ever-present problem of street traffic, not to mention the delight of the bus patron in being relieved of the necessity of costly and time-consuming terminal transfers. In this connection, the actions of the municipal government of New York have been mentioned. It is not surprising that such a huge city should be among the first to face the problem.

But the street congestion problem is by no means confined to the larger cities. It exists in almost every county seat town throughout the nation. Municipal governments everywhere are groping for a solution. Bus lines are being called upon to cooperate in effecting a partial solution through the use of union terminals in more and more cities each year. It is a reasonable assumption that municipal pressure for reduction of bus traffic on city streets will increase steadily in the years to come.

Possibly not the least among the advantages of the union terminal is the elimination of confusion in the minds of the traveling public. How much simpler for the infrequent traveler if he could be assured that the desired schedule would be operated from a single central point.

Program Has Stumbling-blocks

I would be naive, indeed, if I attempted to convince anyone that there are no major obstacles to be encountered in the development of a union terminal program. There are two schools of thought among major bus operators at the moment concerning the use of union terminals. These are exact opposites, the one being that union terminals should be developed at all costs, leaving the ensuing difficulties to be worked out as they arise. These men have gone so far as to urge municipal and state governments to enact legislation prohibiting several separate bus terminals within a municipality.

The other school of thought is that it is foolhardy to place an established bus business in close proximity to competitive service, and that participation in a bonafide union terminal guaranteeing all carriers a "fair shake" is not to be considered. This second school of thought has influenced the organization of many joint terminal operations, very few of which can properly be termed real union terminals. For instance, a large carrier finding itself with some extra space in a terminal invites several carefully selected small carriers to participate. This arrangement gives the following advantages to the large carrier: (1) some interchange of business, (2) some assistance in defraying terminal expenses and (3) additional people are brought into the terminal and exposed to the concessions.

Bogus vs. Real Union Terminal

The small carrier goes along with the arrangement because he obtains the benefit of a terminal facility he could not otherwise afford; he is relieved of the responsibility of terminal management; his costs are usually high but he rationalizes that they are no higher than he would have to pay for a poorer terminal of his own. As for obtaining passengers to any points competitive with the major carrier, he knows he will not get them. But he shrugs this off as one of the prices he must pay for the obvious advantages of the better terminal facility. This is a far cry from a modern concept of a union terminal, but is a true picture of most facilities which masquerade under the title.

A study of the few genuine union terminals will show that the modern concept is workable. The bus industry has been progressive, and has had the courage to try many innovations which must have made railroad executives wince. Oddly enough, these innovations generally have proved to be sound and are now accepted practice. It is not inconceivable that history should repeat itself in the case of the union terminal, and that the bus industry will be the first transportation medium to adopt a widespread union terminal program.

• **LEE C. WEBB** started as a bus driver back in 1930, in 1946 was named General Manager, Lines East, of American Buslines. In 1947 he was appointed Chief of the Bus Terminal Bureau of the New York Port Authority to assist in preparing plans for the new terminal. In 1950, on completion of the project, he was named superintendent.

Higher Standards of Service— Not Higher Fares . . .

. . . says **R. G. (BILL) PERRY,** *General Traffic Manager of Provincial Transport Company of Montreal, and its operating subsidiaries.*

In the following interview, Bill points out that higher standards of intercity bus service will improve the load factor and, as a consequence, allow the intercity carrier to show an improvement in the operating ratio.

Q • Mr. Perry, you are well aware of the problem of decreased riding facing the intercity bus industry today, both in your country and in the States. As the general traffic manager of a successful Canadian intercity operation, I wonder if you have any concrete suggestions as to how the industry might re-shape its approach to a possible solution to this problem?

A • Yes, I have. And let me say that, after 20 years in the industry, I believe I am not only conversant with our own properties. I also have traveled extensively and have a good general idea of what has occurred, and is occurring, on the North American continent.

Q • Well, for instance, what sort of a check do you maintain on your own operation so that you have a clear picture at all times of what is happening?

A • We are maintaining constantly very close supervision over the revenue obtained from each individual service operated. As a consequence, we have been able to improve our revenue per mile and reduce operating expenses by gaining greater usage of our vehicles. I am certain that any operator, who is concerned over future developments, would be well advised to have a thorough check made of the services which he is trying to merchandise.

Q • How do you mean that?

A • Well, I am not suggesting the use of so-called spotters or eavesdroppers, but there are ways and means of getting this information. The important thing, of course, is to get the true picture of the operation and not to assume a situation which doesn't exist.

Q • You believe, then, that many carriers don't take the trouble to get this true picture of their operations?

A • Well, I'll put it this way. The trouble with many of us is that we don't want to hear about our shortcomings, let alone discuss them. When things become difficult, the easy way out is to raise fares. Until we raise the standard of service to a reasonable point, I cannot see any justification in raising the rate structure as a solution to improving the operating ratio. Many companies, due to one or more conditions, have tried to improve their gross and net revenue by increasing the cost of service to their patrons.

We are all acquainted with the law of diminishing returns, but few of us seem to realize that many people who are willing to spend $1 will balk at spending $1.25 for the same service. Again, this increased rate structure has driven people to buying either new or used cars. In such cases not only is the passenger lost to the industry, but he invariably induces one or more friends to travel with him. A private car definitely provides more flexible transportation. Some people are willing to pay for this extra service when they find the cost of day-to-day transportation has increased to a point where a car seems worthwhile.

Q • Now let's get back to your own company. What is the extent of your operations in Canada?

A • We have two companies: Provincial Transport Company and Colonial Coach Lines Limited. Provincial Transport operates services in the western portion of the Province of Quebec, and Colonial Coach Lines in the eastern section of Ontario. The number of buses assigned to intercity services in 1950 totaled 477, ranging in size from 29 to 37 passengers.

Q • What has been the pattern of growth over the past few years?

A • A comparison of statistics for Provincial shows that, in 1940, the line served 1,543 highway route miles, revenue per bus mile was 28.43, passengers totaled 2,770,545, with revenues of $1,316,937. Bus miles came to 4,631,977, and the average fare per passenger was 48¢. For 1950 the picture was 2,138 route miles, a revenue per mile of 45.17¢, a total of 16,133,095 passengers, with revenues of $7,364,608. Bus miles totaled 16,302,600, and the average fare per passenger dropped to 46¢.

Q • Has the population in the provinces served gone up substantially during this period?

A • The population in the two provinces has increased 20 per cent from 1940 to 1950. During this same period highway route mileage served by Provincial has been increased approximately 33⅓ per cent, and for Colonial approximately 78 per cent. In these 10 years we have added to our route mileage either through application for an extension of services, or by acquisition of other companies by purchase. In one transaction, we acquired a company whose annual revenue was approximately $750,000.

Q • To what particular factor do you attribute this development?

A • There are, of course, a number of factors involved. But I believe the main reason for this upswing in patronage is our success in maintaining a very reasonable rate structure. During the past 20 years, we have only increased our basic one-way fares by five per cent. This increase was somewhat higher on the lower fares. For instance, the one-way fare of 20 cents was increased to 25 cents, actually a 25 per cent increase. However, the $1.00 fare was only increased to $1.05. Our commutation fares have only gone up slightly. At present, a 50 ride book of tickets (where the one-way fare is 50 cents) only costs $11, or 22 cents per trip. Ten years ago this same book cost $10, so the increase has been 10 per cent. The increase referred to, incidentally, went into effect in February, 1949.

Q • It's true, though, isn't it, that you don't have the competition from passenger cars that we have?

A • No, the competitive situation in our territory is pretty consistent with what exists elsewhere. On short haul traffic, we realize that it is the automobile which provides the greater competition. And a review of our earnings would indicate that it is the short haul traffic which has diminished and, as a result, the average fare paid per passenger has increased slightly.

Q • But what about the increase in operating costs? Haven't you been hampered less by rising costs than we have?

A • On the contrary, we have had to bear a greater percentage of increases than our connecting carriers in the United States. Practically all buses used in Canada are of U. S. manufacture. And buses fabricated here must of necessity depend upon U. S. manufacturers for their basic units, such as engines, axles, steering gear, transmissions, clutches, etc. As all this equipment is duty paid in Canada, the Canadian users not only have to pay the many increases that have gone into effect, but also duty and taxes on these increases. So, today, we are paying more for complete buses and all replacement parts. And, regarding the gas and diesel oil tax, we are now paying 13 cents an imperial gallon in Quebec and 11 cents in Ontario.

Q • What about wages? Have they continued to climb as they have in the states?

A • Well, as to that, I can say that wages paid our operating and maintenance personnel are reasonably close to similar wages paid in the United States.

Q • Well now, Mr. Perry, you referred before to the effect of higher fares. You believe, apparently, that increased rates are the main reason for the loss of riders to the private automobile. Is that right?

A • Well, that's part of it. In many instances the carriers have themselves to blame for some of the decreases which have occurred. The rest stop and terminal situation in many of our cities is still substandard. I believe that a vast improvement has been carried out in the past 20 years, but there is still plenty of room for improvement in service. Isn't it reasonable that the public, after experiencing and paying for a mediocre service, should feel inclined to either reduce their frequency of bus travel or seek other methods of transportation?

Q • Along with improvement in service, how important do you consider advertising in gaining, or retaining, riders?

A • There are still some people in the industry who believe that the logical way to stimulate traffic is through advertising. This is a viewpoint I don't subscribe to one hundred per cent. Let me cite you an instance of what I mean. Right here on my desk I have clippings from two newspaper editorials recently published in one of your southern cities. These editorials take one of your large intercity carriers to task for maintaining an "ancient and inadequate relic" of a bus terminal in that city. According to these editorials the age and condition of the terminal is so incredible that it must be seen to be believed. Yet, while maintaining this type of facility, this carrier was spending large sums of money for paid advertising space. Now that, to me, is rather ridiculous. I feel that a lot of this advertising money should be spent on improvement of service and terminal and rest stop facilities. This is the best type of advertising a company can do.

Q • I take it, though, you are not against a certain amount of advertising?

A • No. I believe that all companies should do a reasonable amount of advertising. One per cent of the gross should amply cover this expenditure. Of course, the fact that any company should find its traffic decreasing is cause for alarm. But isn't it reasonable to assume that companies, which over the last 10 years have carried millions of passengers, should take the position to a great extent that their services are already well known and recognized?

Q • This comment applies to your own operations. Would you say it also applied to the majority of intercity carriers?

A • There would be some exceptions, naturally, but in general I think it applies to most carriers. At any rate, we have found that our load factor has been increasing due to an attractive rate structure, proper timing of schedules, and other improvements in service. There is, too, another point I'd like to make: the importance of having a genuine faith in one's own industry. I am one who strongly believes there is in existence a vast market for the type of service which our industry provides. Having that belief, it seems to me, is all part of making an honest effort to improve load factors.

Now, let me conclude this with one more thought. Or, rather, let me throw a question myself, at the average intercity bus company. What was your operating ratio for the first six months of 1951, compared to 1950? I've been doing a lot of "sounding off" here, but our own figures tend to substantiate my views. The operating ratio of our Colonial Coach Lines, a more truly intercity operation than our Provincial Transport Company, was 82.02 per cent for the first six months of 1950. For the first six months of 1951 the ratio was 78.40. This operating ratio figure, of course, is exclusive of depreciation.

A never-ceasing parade of problems . . .

. . . Intercity Bus

IN REVIEWING and analyzing our position with regard to labor and material as of this time, as compared to conditions existing during the World War II period, we of course do not want to infer that conditions as yet are as difficult and trying as they were during that hectic period. But certainly in our opinion they are fast headed in that general direction.

Cut Backs Were Necessary

I would like to mention here that with the decline in business felt generally by operators following World War II, the need for retrenchment became very obvious to us even though fleets at that time were generally in a bad state of repairs due principally to the lack of vital parts, material and manpower. As parts, material, and labor became more readily available we experienced the task of rebuilding coaches throughout, and at the same time tried to cut costs to meet the decline in traffic. The task was made even more difficult by the need of using inexperienced mechanics.

Shortly after fleets and facilities were restored to prewar standards we found ourselves in the midst of the still existing Korean situation, vast rearmament programs, mobilization, shortage of material, controls, and day by day the demand for certain parts and material becoming more and more acute. When checking with suppliers, the World War II stock answer of "no stock—no promise" is again forthcoming.

The Buses Have to Roll

We are now confronted with the problem of getting coaches back into service even though the necessary parts are not readily available to us. We again contact our regular source of supply shouting "coach down, must have parts." This failing to do any good, we begin to beat the bushes: contacting the Marine engine distributors, tractor distributors, or any other distributor who stocks parts identical to those we need. And frequently this meets with success. Just about the time parts are located and you figure you're out of the woods on that one and settle down to analyze some of your routine reports and the answering of mail that has probably been held up for a day or two, the storekeeper and shop foreman walk in. They report that certain parts on order for air conditioning units have not been received, that we are practically out of freon, and that the temperature is 98° outside.

We again pick up the telephone, call suppliers, trace shipments and finally wind up by having to resort to the extremely costly (but as old as the industry) procedure of robbing Peter to pay Paul. By that I mean the removing of parts and material from one coach out of service to get another coach back in service. This is certainly not recommended by us nor is it our policy, as I know of no better method to increase maintenance costs any more extravagantly.

Commenting further on air conditioning, we would like to mention first that about 50 per cent of our fleet is now air conditioned and that units generally are performing much more satisfactorily than in previous years and failures have been reduced substantially for several reasons. The most important is the development of mountings, fittings, and flexible lines that would stand up for a longer period of time under the constant pounding and vibration that units are subjected to for the six month period that they are in operation.

I do not mean to imply that we are satisfied in this respect. We are positive that we can eliminate a great many of the failures that we are still experiencing, with the further development of units and component parts. However, we do not want to give full credit for our experience to the development of units, as a great portion of this credit is due service personnel who are becoming more and more experienced in the maintenance of units.

With conditions as they are today I am firmly convinced that...

. . . we should get every safe mile out of every part available to us

. . . we should get every safe mile out of every tire available to us

. . . we should impress on our drivers the gravity of the situation and the importance of taking extra care in handling equipment

Last Resort: Costly Repairs

In some instances it is necessary to resort to the repairing of some part or parts when the cost of such repair exceeds cost of a new part; in many

Maintenance

By A. J. Poche • *General Superintendent, Teche Greyhound Lines*

instances more than threefold. It is our policy to perform repairs to parts and material regardless of cost if by so doing it will enable us to get the coach back in service, provided such repair is equivalent to a new part in every way with regard to safety of operation. Safety was certainly first and foremost during the hectic years of World War II and will not be sacrificed during the present crisis.

Coaches Are Cannibalized

Now, in walks the tire company representative. He advises that if a shipment that left the factory yesterday doesn't arrive by tomorrow morning we shall be practically out of tires. There are only four of this size, two of that size, three of another size on the property. What shall we do? We then call for the list of coaches out of service, some for major overhauls and other repairs, and advise him that if shipment does not come in in time we can rob a tire or two from these vehicles to tide us over. And that this will probably take care of the situation until shipment does arrive. He walks out in much better frame of mind, knowing that this obstacle has been hurdled, temporarily at least.

Make Every Part Count

With conditions as they are today, the writer is firmly convinced that we should get every safe mile out of every part available to us; that we should get every safe mile out of every tire available to us; that we should impress drivers with the gravity of the situation; and also impress them with the importance of taking extra care in the handling of their equipment.

In view of the trend to operate coaches longer distances to provide passengers through service, we are confronted with the task of providing more thorough and exacting maintenance in order to keep road failures to a minimum. Road failures in this type of service are extremely costly, even without considering the adverse criticism that is heaped upon us by passengers who have been inconvenienced by a road failure.

In addition to being a convenience to the traveling public, the cost of maintenance of through coaches will be less than coaches operating on shorter runs, provided a program of preventive maintenance is strictly followed.

Service Training Helped

Following World War II we were able to supplement our extremely short maintenance crews with many veterans who had received valuable training in the various branches of the Armed Services. The training that these men received in the service plus on the job training enable them in a relatively short period of time to become skilled mechanics. These men, plus veteran employees who were with the Company for many years prior to World War II, were of inestimable value in servicing, overhauling, and getting the fleet back to pre-war standards.

Shortly thereafter, due to declines in traffic, it became necessary to further reduce cost, and to accomplish this we closed several of our outlying service garages, reduced forces in others, did not replace employees leaving the Maintenance Department, and hired only those needed for special work.

Korea: Full Circle Again

Then, with the outbreak of the Korean hostilities and the vast rearmament program, we began to add schedules and operate many second and third sections due to increases in traffic. This forced us to employ more operators, office personnel, agents and last, but certainly not least, more mechanics.

With automobiles and trucks being turned out by manufacturers in unprecedented numbers, the demand for mechanics in the automotive and truck garages had suddenly become greater than at any other time in history. These employees are hired on a percentage basis and the competent and energetic mechanic working on the above basis, long hours of course, earns more than we offer for a 40 hour week. Even though wage scales on this property are the highest in the area and compare very favorably to any in the country.

Help is Hard to Find

We have been very diligent in our efforts to secure skilled employees through employment agencies and newspaper advertisements but have had very little success, and have therefore necessarily been forced to employ inexperienced help for on the job training. Unskilled and semi-skilled employees are certainly not an asset to any maintenance department. But the writer is becoming more and more convinced that the only practical way to have an efficient maintenance department is to hire younger employees, provide on the job training of some description, and advance them through the ranks as they become more proficient.

In conclusion I would like to point out that, in our opinion, we should also provide our garages with every labor saving device known to the industry in order to offset ever increasing cost and labor shortages.

Operating Ratio vs. Return on Investment

By **Harry W. Arnold** • *Chairman of a joint committee representing the ATA Committee on Rate Making, and the NAMBO Committee on State Commission Cooperation*

REGULATORY POLICY in the common carrier bus industry with respect to the question of operating ratios vs. return-on-investment as a base for rate-making is a subject of vital importance today to local transit and intercity carriers alike. There is increasing evidence that the use of the return-on investment theory can no longer be supported, in justice to the nation's bus carriers, and, therefore, that consideration should be given to the use of operating ratios as the base for rate making, or at least its use as a supplement to the return-on-investment theory.

This has been the independent thinking of a number of bus industry leaders for the past few years. This thinking was crystalized into concrete action early this year with the formation of a bus industry committee to meet with a special committee representing the National Association of Railroad and Utilities Commissioners.

Serving with me on the joint bus industry committee from the transit side are the following: George W. Anderson, Robert H. Farrell, John F. Curtin, Harold J. Drescher, H. A. George, Marc Haas, N. H. Hawkins, Jr., Leonard E. Manuel and C. F. Rogge.

Representing the intercity side are Jack Garrett Scott, Robert Driscoll, Harold R. Hosea, John R. Turney, Jr., Gilbert Nurick, Robert F. Thompson, R. C. Hoffman, Jr., Eugene T. Liipfert and L. H. Ristow.

The special committee representing NARUC is made up of Ray O. Martin, Commissioner, Public Utilities Commission of Ohio; Harold E. Poslusney, Supervisor, Motor Vehicle Section Illinois Commerce Commission; V. M. Parshall, Examiner, New York Public Service Commission; John J. Bonebrake, Director, Rate Division, Kansas State Corporation Commission; J. G. Hunter, Asst. Director of Transportation, California Public Utilities Commission; and John M. Kinnaird, Acting Commissioner, Department of Motor Transportation, Kentucky.

This industry committee, representing the joint interests of transit and intercity carriers, has met twice with the special committee from NARUC. Preliminary discussions have centered around a number of important factors in connection with rate regulations in the bus industry.

Harry W. Arnold is president of Ohio Rapid Transit, Inc., a holding company which owns a number of transit and intercity companies operating in Ohio. He has been active in the affairs of the American Transit Association, and is currently a member of the finance committee of the association and a member of the board of directors representing region 3.

It is important to note it is the policies of the various state regulatory bodies with which we are most concerned on this question of rate making. This is because the ICC policy governing interstate carriers already provides for the use of the operating ratio principle, although its definition of the term does not consider income or excess profits, state or federal.

At the present time our committee is gathering information concerning each state's rules of rate making and practices in connection therewith. And also information on the jurisdiction of state commissions over operations of local transit companies, particularly "home rule" provisions for regulation by municipal authorities, and whether or not provision is made for appeal to the regulatory commission.

Amendment of Laws May Be Needed

It might, of course, be necessary to amend the statutes of a few states before the operating ratio principle could be applied as the sole or controlling factor in rate making. It is a fact, however, that even in states where the return-on-investment theory is presently mandatory, the operating ratio can provide the best evidence of what constitutes a fair return on the investment value fixed by a regulatory commission. And such use of the operating ratio would give recognition to the essential differences between the bus industry and other regulated utilities.

These differences between the present day bus industry and other public utilities need to be given serious consideration, as we have pointed out in our discussions with the special committee from NARUC. The return-on-investment theory of rate making, as we all know, derives from the early state public utility regulations as they applied to monopolistic or semi-monopolistic utilities, such as water, gas, telephone and electric companies.

There were two sound reasons for the application of this rate-making theory: First, to protect the public from exorbitant utility rates levied by an enterprise in a monopolistic position; and, second, to protect public utility investors and provide for the continued attraction of credit and equity capital for the public utility companies.

With a few exceptions, state commissions, municipalities and other political subdivisions with jurisdiction over common carrier bus fares continue to apply the return-on-investment theory of rate making, despite the fact that the bus business is neither monopolistic or semi-monopolistic, but highly competitive. Intercity bus carriers compete in varying degrees with other public carriers. Both intercity and transit carriers compete with the private automobile, their principal competitor, and the record makes clear that the present financial plight

of many transit and intercity companies stems directly from this private automobile competition.

The exceptions referred to above cover the regulatory commissions of the states of California, Connecticut, Maine, Massachusetts and Utah, which have recently issued decisions in transit company fare cases in which consideration was given to other factors as well as to the return on investment. Then, too, it should be noted that the city charter of Lansing, Michigan, has been recently amended to provide for the creation of a transit commission authorized to adjust fares so as to enable a carrier to maintain an operating ratio of total operating expense to gross operating revenue of not more than 90 per cent. The total operating expenses are to include all expense items, including depreciation, interest and all taxes.

The state of Washington has authorized the State Public Service Commission to use alternative methods in establishing bus fares, specifically empowering the commission to use "any standard, formula, method or theory of valuation reasonably calculated to arrive at the objective of prescribing and authorizing just and reasonable rates."

Equally apparent is the fallacy of imposing the return-on-investment theory of rate making to the bus business when the annual revenues and plant investment are compared to other types of public utilities. In the case of the latter, plant investment value is three or more times the total of annual revenues. In the bus business, however, plant investment represents but a small fraction of the annual revenues. In other utilities, a sufficiently broad rate base is allowed to provide for an adequate return at an authorized percentage rate. In the bus industry the same protection is not provided, particularly during periods of adverse economic conditions. The base in the bus industry is small, and in many instances is subject to wide fluctuations.

Bus Business Shown Differently

Included in the bus industry financial and statistical data which we presented to the members of the NARUC special committee for their consideration, is the following interesting comparison which emphasizes the wide differences in the character of the bus business in relation to other types of public utilities. The figures are for the year 1947, and show the dollars invested in gross plant necessary to produce each dollar of annual revenues:

Utility Group	Ratio of Gross Plant to Annual Revenue
117 Electric companies	$3.95
53 gas companies	3.72
7 telephone companies	3.41
6 water companies	8.14
12 street railway companies	2.33
12 BUS COMPANIES	**.95**

If the comparison is based upon net value of operating property and annual revenues, the following appears:

Utility Group	Ratio of Net Plant to Annual Revenue
117 electric companies	$3.08
53 gas companies	2.83
7 telephone companies	2.29
6 water companies	6.76
12 street railway companies	1.56
12 BUS COMPANIES	**.53**

The bus figures in these two tabulations relate to local transit operations. Intercity ratios show even more striking figures. In 1947 the ratio of gross plant to annual revenue was 71 cents and the corresponding ratio based on net (depreciated) plant was less than 35 cents.

It is clear from these figures, then, that the total capital required to produce a given total of revenue by other types of public utilities was several times that required by a bus company. In other words, the plant investment required by a bus company to produce each dollar volume of public service is only from 10 to 25 per cent of that required by other utilities. On this basis, a railroad company would be entitled to seven times as much return as an intercity bus company if each handled the same number of passengers the same distance in the same period. Similarly, street railways would be entitled to three times as much return as local bus companies for carrying out essentially the same service.

Five Per Cent Means an Awful Lot

It is obvious from the above that, if the "rate-of-return" theory is applied to both bus and other utilities, either an overestimate of revenues or an underestimate of expenses of five per cent by a regulatory agency would still allow railroads to earn four per cent as compared with the six per cent return allowed. With bus companies, however, instead of the six per cent return, there would be losses ranging up to about 10 per cent, simply because of the five per cent error on the part of the regulatory body in estimating revenues or expenses.

Obviously, the bus industry is in no position to withstand such an onslaught. In our presentations to the members of the NARUC committee we have tried to impress on them the fact that the economic conditions as they apply to the bus industry are not now stable and never have been. The postwar trend, for us, has been toward decreasing revenues and increasing costs. Under present conditions, a slight decrease in revenue passengers or an increase in operating expenses has the practical immediate result of placing a bus company in a perilous financial situation, despite immediate application of such operating adjustments as may be practicable.

A related problem, which we have stressed in our discussions with the members of the NARUC committee, is the time-consuming procedure involved in hearing applications for a fare increase under the return-on-investment theory. Many controversial issues are involved in determining the proper values of a bus company's property for the purpose of fixing fares, and very frequently the procedure requires from six months to a year or more. Under such conditions permanent insolvency may result before the need for a higher fare can be substantiated.

Emphasizing Lack of Risk Capital

Another of our problems which we have placed great emphasis on, is our inability to attract adequate equity capital to our business. When the peculiarly heavy risks involved are considered, a rate of return on investment of say six per cent is entirely inadequate to attract investors with venture capital.

In our future meetings and discussions with the members of the special committee representing NARUC we will continue to urge that a similar and uniform procedure in respect to bus fares be adopted by all the states and their regulatory bodies, and that bus fares be determined on the basis of cost of service. This should cover all actual operating costs, including depreciation, taxes and interest, plus a profit sufficient to provide the credit and equity capital which the carriers need for extensions and improvement of service.

Fred W. Mills is president and general manager of the Modern Coach Corporation (Modern Trailways), with headquarters in Albany, Georgia. His operation services 2,189 miles of route in the states of Georgia, Alabama and Florida. Prior to his election to the presidency of National Trailways this year, Mr. Mills served on the board of directors and many committees of the association.

Intercity Labor Trends

A careful analysis of some of the factors bearing on employment, manpower shortages, current wage levels and labor contracts helps clarify the labor picture as it presently exists

By **Fred W. Mills** • *President*
National Trailways Bus System

THE CURRENT labor picture in the intercity bus industry contains what seems to be a contradiction. For about four years, the trend of employment has been steadily downward; at the beginning of the second quarter* of this year, the estimated total was more than 15 per cent below the 1946 figure. At the same time, about half the carriers questioned in a special survey last spring reported labor shortages. It seems to me that a study of some of the reasons for this apparent contradiction will give a fairly complete description of what is happening in our industry's labor situation as a whole.

The gradual reduction in employment, beginning in 1947, was caused by the falling off in bus travel following World War II and the tremendous increase in the use of private automobiles. The decrease in the numbers of drivers employed by Class 1 carriers has followed fairly closely the reductions in service (i.e., vehicle miles) made in response to lighter demands. This is easily seen because, during the first quarter of this year, vehicle miles per driver were within a small fraction of the 1946 figure. But the need for economy did result in heavier cuts in non-operating personnel.

The need for personnel reductions was, of course, not only the result of decreased traffic and revenues; increases in wage rates and pay provisions are a very important factor. Driver costs per bus mile, for example, are about a third higher than they were in 1946. In terms of passenger miles, the increase in driver cost is even more surprising because of the reduction in the average load factor. As of April, 1951, driver costs per passenger mile were estimated at 61 per cent above the 1946 figure. The increase in total labor costs per passenger mile has been held to a lower figure (roughly 45 per cent) by making reductions in employment, principally non-operating personnel.

It is difficult to judge the outlook as to wage trends. As long as there is some attempt at wage stabilization under the present administration, it is certain that wage controls will be tied directly to retail prices. Anyone would be very rash to attempt to predict price trends further than to guess that there will certainly be no important decreases during the mobilization program; unless price-control provisions of the second Defense Production Act are strengthened, there will probably be further increases.

* *The statistics used in this article were furnished by NAMBO and, in most cases, the latest available information is for the first quarter of 1951. Publication schedules made it necessary to prepare this article before final returns for a later period were in.*

In this connection, I should like to repeat here something that Mr. Hill has emphasized clearly elsewhere in this issue (page 42). It is the statement that the bus industry cannot resist these inflationary pressures by itself. Higher costs can be absorbed to some extent if we can increase riding and the load factors. Reports for the first quarter of 1951 show a small improvement over the previous year, but the difference is far too small as yet. But there is some ground for hoping that the bottom of the post World War II dip in passenger volume may have been reached.

The other side of the apparent contradiction in the present intercity bus labor picture—the appearance of scattered manpower shortages—is the result of several factors.

Wherever there are shortages, the need is principally for drivers and mechanics. There are not many areas in which other types of jobs cannot be filled reasonably quickly although the situation is tightening as the effects of defense production become plainer. The personnel reductions made during the last year have been concentrated in the non-operating jobs other than mechanics. It follows that neither of these shortages was caused by the reductions.

Further, the nature of the problem of hiring mechanics is quite different from the problem of hiring drivers. The main qualifications required for mechanics are training and experience, neither of which can be gained rapidly. The shortages of mechanics is general, and is not confined to the bus industry. In its report for the week of June 13, 1951, the United States Employment Service reported 547 orders in 42 states for automotive mechanics which it was unable to fill.

In the case of drivers, the need is for adequate physical and mental qualifications and aptitudes. The legal requirements themselves are high, and the standards of most operators, based on their experience, are even higher. Thus the problem here is one of recruiting in competition with many other industries (and the Armed Forces) where these same types of qualifications are more important than some kind of specialized training or experience.

Since personnel reductions made by management in the jobs in which shortages are now reported have been small, it must be that any shortages are mainly the result of quits or resignations and this raises the question as to the reasons. The answer is not a simple one. There have been some manpower losses to the Armed Forces, but the proportions are not great, especially in the case of selective service because the maximum age for inductees is too low to include more than a few of the experienced personnel. It does not seem that wages are of primary importance in draining off the bus industry's manpower. As of the first quarter of this year, the average intercity bus driver earned more than $77 per week which is more than 20 per cent higher than the take-home pay of the average factory worker. What is much more important is the failure of some Federal agencies to give enough consideration to transportation manpower problems. As Mr. Hill says in his article, I hope we are on the way to clearing up this most pressing problem.

The Bus Industry Can Point to a Good Labor Record

The past year's record of labor relations in our industry seems to have been a fairly good one. According to NAMBO's figures for the year ending last June, there were 21 strikes and about 33,000 man days of work lost on account of them. This seems a large number of man days, but it amounts to only one day for each 560 out of the total put in by all bus employees during the year. This is a much better record than that for industry generally which lost nearly half again as much of its total working time on account of strikes.

Figures are not available but there seems to be a definite trend toward labor contracts made for longer periods, not only in the bus industry but also in other industries. This tends to cut down on the number of strikes, but they occasionally last longer when they do occur.

Perhaps another reason is that the Taft-Hartley Act has turned out to be an effective and fair law. In the bus industry, during the past year, there have been no really important disputes or proceedings growing out of the Act so far as I know, and I doubt that either management or labor in our industry has been seriously hurt by any of its provisions. It is certain that it has not had the effect of reducing union membership as some labor leaders predicted, because union membership, according to all available reports, is at an all-time high.

What has been said so far has to do with the labor problems that the average bus operator faces day-to-day as an employer. It seems to me that there is another side of the labor picture, and that is the one that is important to the bus operator as a citizen just as it is to every other citizen.

Labor Relations Have Far-reaching and Varied Effects

It is now almost 10 years that we have been running at what economists call a full-employment level. In practical terms that means a sellers market for the 60-odd million persons that make up the labor force. That fact is important to the bus operator in his business because it affects his costs and his operating policies and methods. But it also means that there is a change in our general thinking, in our politics and in our habits generally.

The best example perhaps is the United Labor Policy Committee. It seems to me that we ought not to make the mistake of thinking of that Committee and the labor organizations that make it up as groups that are merely interested in better wages and working conditions. That is not so and I think we as bus operators and as citizens ought to be aware of these changes and what they mean.

A recent publication of the Chamber of Commerce of the U.S. has stated it very well in discussing the mobilization program: "The demands organized labor is making upon the President and his mobilization administrators must be recognized for what they really are: proposals calculated to produce basic and permanent changes not only in labor relations but also in the administrative phases of government."

The Public's Responsibility Toward Transit

By H. L. Bollum • *President*
American Transit Association

TRANSIT COMPANIES throughout the nation were staggering along on wobbly financial legs long before the bugaboo of inflation hit them. Now, everyone in transit is seeking ways and means of increasing revenues—and quickly. It's becoming an old story. We seem to be running out of ideas on how to meet continuing financial losses.

An advertising man might attack the problem by saying: "The transit industry's needs are two-fold: more riders and higher fares." This is too simple a solution. We all know how greater use of the private automobile is reducing riding on transit vehicles. We also are aware that we face the prospect of bumping our heads against the economic ceiling every time we hike fares.

Add to this the financial drain of waiting too long for fare increases that too often are inadequate when finally granted.

No. 1 Problem: More Revenue

How to get fresh revenues is the No. 1 problem confronting city transit operators.

Despite the obvious fact that city transit buses make the most economical use of available street space, the efforts of many city planners and other officials seem to be directed toward providing for more and more private motor vehicles to enter the already overcongested business areas. This only serves to intensify the existing problem.

The theory of subsidizing the transit industry may be repugnant both to the industry and the general public. But, it may well be that some form of public subsidy from local tax funds will be necessary if downtown areas (high tax base areas) are to be kept readily accessible to the general public through mass transportation facilities.

Comfort and Convenience

Transit should be comfortable and convenient, with fares kept within reason. However, to alleviate the glut of traffic congestion and maintain the high tax base areas through provision of proper transit service, the subsidy question may soon face public officials.

As long ago as April, 1932, the Committee on City Passenger Transportation of the U. S. Chamber of Commerce made this report: "Where public interest requires construction of rapid transit lines or other transit improvements, the cost of which cannot be financed on the basis of prospective receipts from riders, the public should participate in such expense."

For many years prior to the 30's the question of financial aid for the establishment of new transit lines had been a subject of discussion, particularly in the case of proposed rapid transit lines involving costs which private capital could not finance.

In the early days of the development of the electric railway industry, many extensions into new real estate developments were made upon the theory that, even if sufficient traffic were not immediately available to justify the cost, traffic would increase as the development grew to a point where the operations would be profitable.

In March, 1950, a Committee on Economics of Service to New Areas prepared a report for the American

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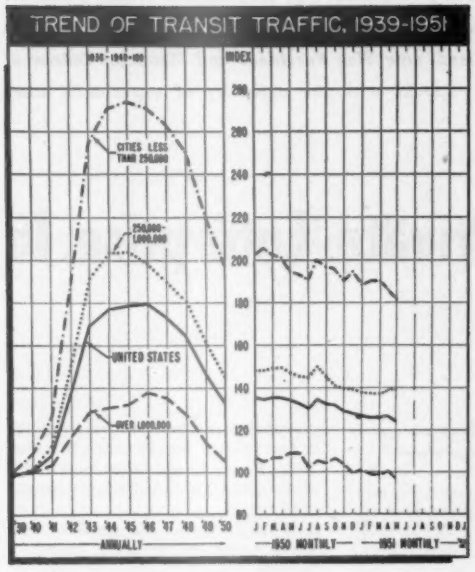
• H. L. BOLLUM, president of the Springfield (Mass.) Street Railway since 1939, entered the transportation field in 1915 at the time of the organization of the Twin City Motor Bus Company in St. Paul, Minn. "Hi," as he is known to his many friends, started at the bottom, but wouldn't "stay put." He ended up as president of the Twin City operation. He resigned in 1937 to shift over to the City Coach Lines in Lansing, Mich., and then joined the Springfield Street Railway organization two years later. "Hi" succeeded Morris Edwards last year as president of the American Transit Association.



Transit Association to show how the transit industry was endeavoring to meet the ever-increasing problem created by population shifts to outlying sections of our urban communities. No definite solutions were found, but much helpful information on current practices within the industry was collected during the course of the study.

Extensions Mean Losses

Virtually all companies reporting various types of subsidies for extended service prefaced their forecasts on this new business with predicted losses, irrespective of the basis of the calculation. In the few cases where extensions of service were subsidized, none of the subsidies appeared to be either adequate or satisfactory.

Still, many transit properties face continuing demands for service extensions farther into the suburbs. Suburban public officials often press these demands without regard to the economics of their costs of operation. Regulatory bodies also have difficulty in denying these demands. These factors also enter into the strong possibility that transit systems serving metropolitan areas may find the public subsidy their only economic salvation.

Decentralization Hikes Costs

Today, the great trend in both mass housing and individual housing is toward suburban areas. The result is that there is a constant shifting away from the central part of the city, not only to the suburbs, but beyond. It is obvious this increased the length, as well as the cost, of the average transit ride.

The word "decentralization" often appears to be the principal term in the lexicon of federal, state and city planners these days. Coincident with decentralization are automobile sales. Hence, transit is facing expanding competition from the private automobile which spells out a losing battle not only for street space, but for riders, as well. *(Ed. note: Turn to page 63 for a full discussion of the problem of "Decentralization" as it affects transit operation in our communities.)*

Approaching the need for new revenues, we are faced with the old question of whether we shall have: (1) A straight flat fare increase, or (2) zone fares. The answer to these questions must be determined by conditions existing in each community.

Much has been written and said on the approach to fare increases, which need not be repeated here. Whether new revenues shall be achieved via a flat fare or zone fare increase is, we repeat, a localized problem.

Flat Fares or Zone Fares?

It is my opinion that a great deal of public education is necessary, at the local level, if the transportation and traffic problems of American cities are to be solved on a sound basis. We must show that only through the greater use of public transportation can masses of people be moved in and out of downtown areas with efficiency. We also must prove that traffic congestion, which slows the wheels of industry, snarls commerce and induces nervous indigestion for the individual, can be most economically alleviated by a sound economic development of mass transportation. These are facts already well known to experienced city planners and traffic engineers, who need the help of transit officials to work out the answers.

Most persons are aware of the fact that public ownership of transit is no panacea. Fares are pushed up in ratio to other spiraling economic factors on publicly-owned properties as well as privately-owned properties.

Furthermore, the trend toward public ownership of transit has slackened in recent years, as municipal officials have come to realize that the actual operation of a transit system carries heavy responsibilities. These eventually may become political liabilities, rather than assets.

When city planners fully recognize the need to provide continuing arteries of public transportation — and the costs exceed the ability of a private operator to provide same—what, then, is the alternative to public ownership of transit facilities?

Subsidies May be Needed

The answer may seem to lie in some form of subsidy from city taxes, which would bring about greater public responsibility toward transit. This would call for appropriate supervision over the contractual relationship between a private operator and a city under which the transportation passenger would pay the actual operating cost, and the general taxpayer would pay for the investment cost in plant and facilities which benefit the entire community and not the rider alone.

Unless there is a reversal of the downward trend of riding, or the upward spiral of costs, the transit industry cannot much longer lull itself into a false sense of security with emergency month-to-month or year-to-year plans which merely maintain a status quo.

Like the nation, cities are expanding and growing, and we must find concrete, workable solutions to the problem of falling revenues, and imminent bankruptcy.

Subsidies are distasteful to freedom-loving Americans. Management initiative and progressive thinking wither under their restrictive influence. Unless the transit industry is courageous enough to present the true economic situation in such a way as to gain more favorable public understanding, public control may become a real threat.

As President of St. Louis Public Service Co., John L. Wilson's success opened the door to even greater opportunity in another field. On these pages Mr. Wilson, now Vice President and Financial Officer of Anheuser-Busch, Inc. speaks with the authority of experience when he says . . .

Private Enterprise In

Back in June BUS TRANSPORTATION wrote Mr. Wilson . . .

. . . "The people of our industry have a very wholesome respect for you and for the things you have accomplished as chief executive of the St. Louis Public Service Co.

"No one knows better than yourself the problems confronting those who are engaged in the business of public transportation and we know that our industry would welcome a word of advice from one who has been an outstandingly competent executive.

"For that purpose we extend an invitation to use the columns of BUS TRANSPORTATION to publish a message from you in our Convention- In-Print Issue."

And Mr. Wilson responded . . .

. . . "When you heard I had severed my connections with the industry you were kind enough to ask me for my observations regarding Transit, particularly as to present and future problems and any possible solution thereof. I will confine my remarks principally to large city operations under private management, as I feel more qualified to discuss the problems of this type operation. Any criticisms I make are intended to be constructive and any suggestions will, I hope, be be objective in nature." ● ● ●

● ● ● First I should like to say that the seven years I spent as President of St. Louis Public Service Co. were most happy ones and I am sure the most interesting of my business career. The transit industry is not only beset with all the problems of any normal business, but in addition has one of the most acute problems in the country today in mass psychology.

I have no desire to pose as one who has all or even any of the answers to the major problems which beset the mass transit industry in America. What I have to add to the subject are some general observations, not necessarily new.

When I was a "bus peddler" (for many years selling Mack buses), I thought I had a pretty good "feel" of the problems of the mass transit industry. But when I became directly responsible for transit operations, I made some amazing discoveries. For the first time I realized just how little any "outsider" can really know about the actual problems of operating a transit company.

If there is one statement which I can make with absolute assurance, it is that just talking about or reading about the problems of the mass transit industry will never take the place of the actual experience itself.

Generally speaking, management was imbued with the idea (and commendably so to a point) of rendering a great public service to the public. I say commendably to a point. Most certainly transit management has an obligation to render service to the public — but not to a point where, by so doing, the operating company is denied a reasonable return on its investment.

Public Service Starts At Home

While in recent years this has been corrected to some extent—management in their commendable desire to render a great public service had neglected to educate their own operating staffs in the great importance of the application of the dollar to each and every move which they might make. The track department merely kept repairing track, the maintenance department kept maintaining, the schedule department kept scheduling, and the operating department kept

Transit Should Be Worth Saving

operating, none of them ever having been educated to the fact that their each and every move, regardless of its magnitude, must be geared to the dollar and governed accordingly. The various operating department heads must be constantly advised of the over-all financial position of their Company, and their education must be continuous as to how their individual operations affect the over-all financial picture.

Financial Balance A Must

In other words, regard for the economics of the organization, an absolute necessity in any business whether it be canning peas or publishing a newspaper, was relegated to a back seat.

In the transit business there must be a financial balance if the companies are to continue to render anything resembling the kind of mass transportation which is an absolute necessity in the major communities of America today. It is only restating the basic economics of the business to say that we must provide adequate service at the lowest possible costs, pay fair wages to our employees, make a fair profit to keep the company in business, and yield a fair return to our investors. When any of these factors get out of balance, not only does the company suffer, but the riding public for whose service we really are in business, ultimately suffers through poor service, antiquated equipment, dangerous vehicles through bad maintenance, poor schedules, and all the cumulative headaches which stem from a financially-sick operation.

The transit industry as a whole has enough problems now. It faces many more in the future. It cannot afford to add to its complexities by losing sight of the need for financial balance at all times. I repeat this latter is a *must* if we are to continue to prevent the disintegration of the mass transit facilities which are so important to the economic need of the people who live in urban communities.

My criticism of the industry is that they are not now, nor have they ever, through their association or otherwise, presented a united front on the idea that transit—the same as any other business, or any other utility—must of necessity make a reasonable return on its investment in order to properly survive in the atmosphere in which it finds itself.

There has been a prevalent feeling that among the public utilities the transit industry does not require a fair profit in order to furnish adequate service. This philosophy is in great measure responsible for some of the difficulties now facing it.

The Historic Fallacy

There are reasons for the above, historical reasons. They have been lived with and accepted by both transit management and the public for so long that it is questionable whether or not private enterprise in the transit industry can continue to survive.

Historically, it came about as a result of the control of certain transit properties by electric power companies which operated the transit companies in conjunction with their business of furnishing electricity. In many instances, under this type of operation, mass transit operated at no profit or at a loss with the difference being made up in the electric department. This form of subsidy, a hidden subsidy, created the atmosphere in which much transit thinking now exists among political, regulatory, and even public and industrial groups. A real disservice to mass transportation will have been created if the false impression that a transit operation can continue to serve without being financially sound is allowed to exist. Municipal operations are not supposed to make money (public opinion). In accepting a recent wage increase, which will cause a very sizable deficit, the Mayor of the City of New York stated that the fare could not be raised, and other means must be used to make up the deficit.

Roller Coaster Ride

Under existing conditions, can we be too critical of the public and the city fathers in their opinion that transit can continue to operate without profit or at a deficit and still give them the type of service they desire.

It is also true, however, that even transit management who are aware of the morass of financial difficulties into which they may sink are up against obstacles which, from a detached point of view of association of other types of industries, seem almost insurmountable.

Short of a critical shortage of gasoline or the rationing of gasoline, which no one wants, the mass transit industry faces the most critical period in its history.

One gets the feel of a roller coaster ride—down the toboggan of decreased riding, then up the slope of inflationary costs, 'round the bend of rider resistance to fare increases, then the dip of increased service, and so on in a hectic spin. Let's take a quick look at some of the "hurdles" which mass transit faces:

(1) *Increasing Labor Costs* — Wages and benefits to labor already represent an over-whelming per-

centage of transit's gross—and they continue to mount. The recent trend of so-called Wage Stabilization towards the use of "cost of living" escalators as a general thing bodes no good for transit. There has been little sign of "escalator" thinking on fares by regulatory bodies. By and large the action of these groups on the matter of fare relief has been ponderously slow, inflexible and time consuming. In fact, lately, one notes a distinct inclination among regulatory authorities to assume the theory that fare increases are not the answer because of their admitted effect on rider decline.

(2) *Increasing Tax Burden*—From every side—local, state, and federal—transit's tax burden increases by leaps and bounds. The proposed Federal tax legislation regarding motor fuels and vehicle parts, discriminatory in nature, is a recent example. Meanwhile, state and local governments continue to add to the already extremely burdensome tax load by means of gross receipts taxes, franchise taxes, paving requirements and special assessments, to the point that the tax burden far exceeds the earnings.

(3) *Increasing decentralization of cities*—This factor has had more effect on transit than it is ordinarily given credit for. Under the impetus of this movement the original concept of "mass transportation" is losing its meaning. Length of haul is continually increasing, density of riding is continually decreasing and commensurate adjustments in fares for the longer hauls have not been received. Demands for extensions into highly unprofitable territory are continually being made. Politicians and "crusading newspapers" find the transit company "fair game." Most companies, unwilling to enter into a bitter, endless controversy for a number of reasons, "take it on the chin," become a "whipping boy," or yield to the highly unreasonable pressures. The result in many instances is impending bankruptcy and a complete chaotic and inadequate transit situation. The net result is that so called mass transportation is taking on the character of semi-taxicab service, at transit fares, of course.

This history repeats itself from the 1929-32 era. Criticism, without objective study of service, fares, and profits (in the few cases where they exist), is the rule in almost every large city in the country. This, of course, is the outgrowth of transit being pinched between a declining market and increasing costs, necessitating higher fares and adjustments in service.

While many authorities are meting out continual criticism of transit, they are constantly urging more subsidies for transit's unregulated competition—the private automobile. These are in the form of huge expenditures for expressways, freeways, public parking facilities, etc.

More Realistic Fare System

Are there any solutions? Obviously I am no "Solomon"—but let's start with some highly idealistic suggestions.

I. The recognition and establishment of a more realistic fare system based on payment for length of haul and density of service. And further, the "oiling" of the machinery used in making fare adjustments to eliminate the "killing" lag between increased cost and compensating fares.

II. A recognition by all parties that we are in the business of providing *mass* transportation service. With this concept clearly established, pressure tactics for extensions into territory where few rider support the transit facilities would be curbed. Also present lines operating into territory not supported would be eliminated, unless aided by some type of subsidy.

III. An objective approach toward the re-alignment and rerouting of the mass transportation system to eliminate duplication and paralleling service and give a more economical and practical coverage of the mass transit area to be served.

IV. Real community assistance and cooperation toward the establishment of an effective program of staggered hours.

V. The setting up of traffic control and regulations on the basis of recognition of transit's more efficient use of the streets. This should cover the inclusion of transit facilities in the design and building of freeways and expressways. In other words, transit should at least get an even break with its unregulated competitor, the private automobile, in all traffic planning.

The above recommendations are not new or original. They should have received recognition by the public authorities long before now.

Private enterprise in transit should be worth saving. However, based on past lack of interest, there is considerable doubt whether these recommendations can gain acceptance under today's conditions. Lacking this "lift," it is my opinion that transit will require some kind of a subsidy. The minimum effective subsidy would be the complete elimination of all burdensome taxes, franchise obligations and assessments now bourne by the privately owned big city transit companies—but not added to the cost of operation of a municipally-owned company.

If the above mentioned type of subsidy were deemed impractical by the public authorities, then we are forced to discuss public ownership. The record indicates that operation of a transit system as a department of the city government has been very unsatisfactory. This is due to the inroads of politics into a business which requires all the efficiency that private management can muster under present conditions just to "keep rolling."

The Bingham Formula

In fact, even the so-called *transit authorities*—which were formed in recent years with the notion of divorcing the operations of publicly owned transit system from political interference—have been having more than their share of troubles. How long can private operations of transit live in its present atmosphere?

The best solution that I have seen to date is the "Bingham Formula." Col. Sidney H. Bingham, Chairman of the Board of Transportation of the City of New York, in his speech before the Los Angeles Transportation Club—copies of which were distributed by the American Transit Association—proposes a new form of transit operation. Public ownership—private management. This formula suggests taking advantage of the best in each form of operation and making it available to the public. I recommend a thorough study of the Bingham Formula to each transit operator and to each municipality, as to me it is the brightest spot on the horizon for both parties.

My great desire is to continue my many friendships in transit, and I hope that as we meet in the future, my friends will join with me in enjoying a bottle of good old "Budweiser."

Decentralization 1951 Style . . .
Transit's Latest Plague

By Donald C. Hyde

General Manager
Cleveland Transit System

• **DONALD C. HYDE** joined the Cleveland Transit System in 1944 as director of personnel, after 15 years with Milwaukee Electric Railway & Transport. He was named acting general manager of CTS late in 1946, and shortly after the turn of the year in 1947 was appointed to the top post of general manager of the system.

REPEATED WAGE increases, higher costs for everything we buy, more autos which take away our business and add to congestion, have added so many headaches and taken so much attention that many of us may be overlooking another problem. This has been creeping up on us and will probably affect our operations as much as these other matters. It is the matter of decentralization of our cities which is fast becoming a real plague to transit operations.

Cities continued to grow rapidly from 1910 to 1930. Multiple family dwellings and narrow lots were the vogue. This made for a high density of population which was good for transit. Growth of most cities slowed to a snail's pace between 1930 and 1940. Most metropolitan areas expanded between 1940 and 1950, due largely to industrial expansion during the war, but this expansion was generally in the outer areas of cities and in the suburbs. The following growth for Cleveland and suburbs is typical of many cities:

INCREASE IN POPULATION

	Cleveland		Suburban Area	
1910-1930	339,766	60.7 %	235,431	370.0%
1930-1940	21,093	2.35%	38,930	13.0%
1940-1950	27,300	3.1 %	133,655	39.5%

The 1950 census shows that the suburbs of 168 metropolitan areas gained 35 per cent in population as compared to 13 per cent for the central cities, between the years 1940 and 1950. The comparable data for the 1930-1940 period showed a 17 per cent increase in the suburbs and six per cent for the central cities.

A recent report by the Cleveland City Planning Commission predicts that in the next 30 years the population of the city of Cleveland will decline by somewhat between 80,000 and 130,000 persons. It also predicts that in the same period the area in Cuyahoga County outside of the city of Cleveland will increase somewhere between 295,000 and 445,000 persons.

This same trend will no doubt prevail in other metropolitan areas because of the tremendous home building program under which more than 1,000,000 houses per year were built within the last three years. Of all new homes constructed in the last three-year period in the Cleveland territory, more than 80 per cent were located in Cleveland's suburban area. This same trend is experienced elsewhere and perhaps more so where whole new communities such as Lakewood Park (17,000 homes) in Los Angeles County; Park Forest, Illinois (11,000 homes) and others have been or are being built.

This trend of furthering the "suburban sprawl" and the terrific annual increase of 3,500,000 vehicles in automobile registrations have generated forces which will have a tremendous impact on our industry unless this 1951 style decentralization is guided through careful regional planning.

Some Results Of Decentralization

Space does not permit completely covering how decentralization will affect transit operations, but some of its results are the following:

1. Lines will serve less dense populations • The most densely populated areas are generally inhabited by persons who formerly could not afford to move out where they had a little yard and a place for their children to play other than in the streets. These are the persons who have benefited substantially by the many rounds of wage increases, and they can now afford something better. Real estate developers who are building up the fringes of cities and the suburbs no longer build houses on 30 and 35 foot lots. The number of family units per mile of street is much fewer in new developments than in the older sections of our cities.

A six mile radius from the center of a city encompasses 113 square miles. Twice this radius, or 12 miles, encompasses 452 square miles—four times the square miles of the six mile radius. If a transit company is having a hard time making ends meet serving the people within a six-mile radius, how in the world can it in the future serve a like number of persons in the next six-mile radius when these people are spread over an area three times that of the inner six miles? Public transportation cannot thrive on serving sparsely populated areas.

As a prime example of this fact, note the situation under study now in St. Louis. In 1950 St. Louis proper had a population of 852,623 while the suburban area had a population of 820,844. The length of transit routes operated by St. Louis County Transit Company which serves the suburban territory in St. Louis County is 41 per cent of the length of routes of St. Louis Public Service Company. However, County Transit handles

only 5.2 per cent of the revenue passengers and 4.6 per cent of the revenue of the Public Service System. To accomplish this, St. Louis County Transit has to operate 10.6 per cent of the Public Service System vehicle mileage.

2. As the length of ride increases, so does the tendency to use automobiles instead of public transportation • We are certainly living in a world in which people want to travel in a minimum of time. The income earner who was satisfied to use public transportation for a five or six-mile ride which took 25 to 30 minutes is not willing to spend 45 minutes to an hour for a one-way ride from his home which is now eight to 12 miles from his office. He and his neighbors are the ones who are congesting the streets with automobiles in central areas of our cities.

The following data, developed some time ago by Cleveland's Real Property Inventory Group clearly establishes this fact.

		CLEVELAND	OUTSIDE CLEVELAND
Percent of families owning automobiles	1935	47.7%	79.5%
	1940	55.0%	85.0%
Income earners driving to work	1935	29.2%	59.3%
	1940	47.4%	74.4%
Income earners using public transit	1935	52.1%	29.2%
	1940	42.0%	20.3%

More recent data is not available but there is no doubt that a much higher proportion of the longer distance commuters drive autos. With this in mind decentralization does not present a happy future for the development of our business.

3. Costs of service per passenger mount rapidly • Nearly all costs figures of our companies are shown in cost per mile. Costs per mile usually decrease as the length of routes increase, due to faster speeds in outlying areas. Wrong conclusions are inevitably arrived at when considering only costs per mile. With a flat fare still existing in most cities, it is the cost per passenger which counts.

Decentralization results in higher costs for carrying our passengers. A 10-minute headway on a 10-mile route takes nearly twice the manpower and number of vehicles as is required for a 10-minute headway on a five-mile route. Saying it another way, one bus and one driver can make nearly two round trips on a five-mile route while making only one round trip on a 10-mile route—and thereby carry many more passengers and collect more fares. Utility Commissions do not alter permissible number of passengers on a bus according to the length of route.

As populations and riders increase near the outer ends of our long lines, less short routing is possible. This adds to the cost of serving nearly all passengers, regardless of where they board. It costs just as much to bring a worker to his office who boards only three miles from downtown as the worker who boards eight miles out, if in both cases the bus they boarded started eight miles from downtown. Decentralization requires more trips to start from the outer ends of lines, thereby adding to the cost of the ride for those who board further in as well.

4. Off-peak riding and income are reduced • Along with decentralization of people comes the development of shopping centers in outlying areas. Many housewives who formerly used a bus to do their marketing now find they can walk to the new shopping center. Huge parking lots surround these new shopping centers, and if it is not convenient to walk the housewife will drive to the spacious parking lot and have an attendant at the market carry her packages right to her car.

The Real Property Inventory of Cleveland recently made a survey of the transportation medium used by persons going to outlying shopping centers. It was found that public transportation is little used for traveling short distances. Results of this survey were as follows:

DISTANCE FROM SHOPPING CENTER

	¼ mi.	¼ to ½ mi.	½ to ¾ mi.	¾-1 mi.	1-1½ mi.	Over 1½ mi.
By automobile	20%	40%	67%	94%	81%	99%
Walked	80%	59%	24%	0%	0%	0%
Transit	1%	1%	9%	6%	19%	1%

The most serious threat to the continuance of central business districts as we know them today are the east coast and west coast king-size regional shopping centers developed on low cost land in the outskirts located near arterial highways and freeways.

What Can Transit Systems Do?

Decentralization is seriously affecting public transportation. Should we try to stop it? Could we stop it if we tried? I believe the answer to both questions is "No." Other people want fresh air, a garden and a yard for their kids to play in just as you and I do. Decentralization is going to lead some transit companies to ruin under our present ways of operating. We must then consider some changes in our operation to cope with it. Some things to be considered are the following:

1. Alter fare structures • Our biggest trouble probably stems from the fact that the cost of service per passenger is increased by decentralization. Most of us have been raising our flat fares to an amount which drives off short riding but is still inadequate to cover expenses of the long round trip. Where do we go from the 15-cent fare?

Zone fares are advanced as the solution by some persons, and they certainly need to be studied more carefully. Some persons who have studied zone fares say they are not feasible in large cities because fare collection becomes too complex with multiple zones. However, the sooner we realize that there is a limit to the distance which we can profitably operate for a flat fare—be it 10 cents, 12 cents, or 15 cents—the better off we will be.

In Cleveland, we have concluded that a combination of flat fare and zone fare was the answer. Our present basic fare is 15 cents cash, seven tickets for $1.00 and a $2.25 weekly pass. The double barreled impact of still higher costs and longer rides in the future will undoubtedly make that fare inadequate to cover all riding. Already, it is inadequate on some lines.

We have therefore established what we choose to call "extension zones" on the outer ends of a number of long lines. An additional five cents is charged to ride into one of these extension zones. That was not considered adequate for one line where service was demanded, so when we inaugurated the extension we established two extension zones. If costs continue to mount we may have to move these extension zones and establish more of them, for we are going to try to preserve our present basic fare. This fare structure recognizes the principle that there is a definite limit to the length of a route for a basic flat fare.

Many companies are already at a 15-cent flat fare and are just about getting along financially. The added cost of continued decentralization will affect their operations as much as that next wage increase that they are now worrying about.

2. Zone the service • In reasonably heavily populated areas, zoning the service offers another solution. Instead of making our lines longer and longer or carrying more passengers from the outer ends of long lines, cutting some long lines into two separate operations will help. It is expensive business to start a trip 10 miles from town when half of the riders board in the inner five miles. Two separate lines—one starting about five or six miles out and the other starting at the terminal 10 miles out but running express through the inner area may turn a loss into a profit. One thing it will do quickly is to demonstrate how unprofitable it is to carry people to town from the outer five miles for a flat fare. The express character of the ride from the outer end has made an additional charge of five cents acceptable where this has been done in Cleveland.

3. Establish express service • After having determined the fare necessary to pay expenses for the long ride, this fare should be established for such rides and then the service speeded up to attract riders to the service. This can be done by express service. People living eight to 10 miles from downtown do not want to go poking along on local service. It will be increasingly more difficult to attract them to public transportation as freeways planned in most large cities are completed.

Some persons argue against a premium fare for express service because the "cost per mile" is less for express service than for local service. We do not charge a higher fare because the service is express and therefore more popular; we charge a higher fare for such service because it starts so far out from the center of town. The time savings make the higher fare acceptable.

Express service separates the long-haul rider from the short-haul rider and demonstrates the need for more money for the long ride. An express service was inaugurated from one of our suburbs (South Euclid) at a fare of 20 cents. The operation lost money. Rather than reduce the service we raised the fare to 23 cents, then to 25 cents and improved the service. The riding has increased steadily and has been profitable since the fare was raised, demonstrating that people in the outer fringe areas will pay a fare necessary to support their transportation if the service can compete with the automobile in travel time.

4. Participate in City and Regional Planning • Sensible planning of the development of fringe areas is important to the principal city, suburbs, and county, as well as to a transportation company. Street improvements, sewers, and police and fire protection are very costly in sparsely settled areas. Where possible, development of fringe areas should be controlled by regional planning with a view toward completing the development and building up of small areas rather than spreading all over the county. Transit executives should participate in the planning and exert their influence on the type of suburban development which will be good for transit as well as the municipalities themselves.

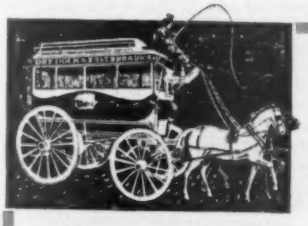
Decentralization is taking place in industry too. Moving of industry away from the borders of the business area to certain fringe areas may be good for transit if it develops riding in both directions during rush hours. We should concern ourselves about which areas are zoned for business.

As industries move out, they generally build large parking lots. It is important for transit to get in on the ground floor while these plants are being erected and have roadways and loops built right to the door of such plants. Public transit may thereby be made preferable to walking nearly a half-mile to the far corners of the company parking lot for the automobile.

The Time Is Now

Decentralization has been creeping up on us very fast since the war. We do not feel its effect from month to month, but over a two or three-year period its effect can be just as serious as a wage increase. We get worked up over the wage increase because it hits us with a terrific jolt on a given date. We probably do not concern ourselves enough about decentralization because it does not hit us with a jolt at a given time. Its cumulative effect, however, is a serious matter for transit.

Future planning of our transit systems must contemplate more decentralization. Some basic changes in routing, types of service, and fare structures seem necessary to meet this decentralization successfully.



Transit Progress Day
Sept. 24, 1951

The Omnibus • Early in the 19th Century the growing business and social life of New York City demanded more than horse-and-buggy transportation. In 1831 the "Omnibus," a horse-drawn coach seating 12 people, first bumped over the cobble-stone streets of New York. Within a few years scores of these vehicles were in operation. This transportation was new and convenient, but it was not regularly scheduled service. **From the ATA pamphlet, "100 Years of Transit Progress."**

Warren R. Pollard, President of Virginia Transit Co. says . . .

Let's Take a Look In the Mirror

- **LOOK for evidence of waste,** in terms of failure to make the maximum use of costly labor, failure to eliminate inefficiency and outmoded operational practices.
- **LOOK for evidence of lethargy,** resulting in the failure to take advantage of all the numerous opportunities still within reach to lick the problems of the industry.

IN GENERAL the transit industry is anemic and suffering from malnutrition. Lack of sufficient earnings is its greatest affliction. This situation results chiefly from the loss of customers to the private automobile while at the same time we are forced to meet the increased cost of labor and supplies. It is no easy task to combat inflation with a shrinking volume of business. But that is the problem we are facing.

When the postwar boom started soon after VJ Day it looked for a while as if transit would continue to ride the wave of upsurging business along with other industries and we were greatly encouraged. But this was not for long. For as soon as automobiles started grinding off the assembly lines in large numbers, the upswing in transit riding quickly leveled out, hesitated only a brief moment, and then started a downward trend which has continued for the past four and one-half years.

Now I don't think that many transit operators ever hoped to hold their wartime riders after the cessation of hostilities. They knew that as soon as wartime restrictions were removed from the use of gasoline and tires and as soon as they were in good supply, along with repair parts and perhaps later new automobiles, many who were forced to use our service would soon drift back to the use of their personal cars. In fact, it was generally conceded that this would happen, and happen rather quickly, and that our level of business would drop to the 1941 or 1942 level in less than two years. We were really rather surprised and delighted that it took four and five years to reach this level rather than two.

Caught in the Inflation Spiral

Altogether, if this had happened in a stable economy I believe the industry could have met this challenge in its stride. But this was not to be. Instead we have had several years of unchecked inflation brought about by an insatiable consumer demand, a weak federal policy based on political expediency rather than the welfare of the nation, and a rapid rise in wages encouraged by the administration. While we're throwing brickbats, I don't think there have been many manufacturers who haven't earned all the traffic would bear in the way of profits. In other words, transit found itself caught in the spiral of inflation, at a time when its business was rapidly being drained away by the private automobile. And we are still caught! As a result of continued inflation, the Cold War, the Korean War, the Preparedness Program, and the extravagant, irresponsible policy of the administration in Washington, transit has been and is hard put to make ends meet.

We are not unaffected by a general rise in labor and other costs. Our employees have had to meet the increase in the cost of living and have properly sought increases in wages. That they have also sought all the traffic would bear is not in any way unnatural, as the international labor unions keep feeding them propaganda and as government economists and other politically minded officials encourage such action. Likewise, as the cost of manufacturing has gone up, so has the cost of the vehicles we buy and the cost of tires, repair parts and supplies we use.

Most businesses can meet these increased labor and material costs by raising the price of the product they sell. In general they are only limited in the price they charge by economic factors such as supply and demand, or by competition. In a seller's market such as we have had, as long as the demand remains greater than the supply, they have no difficulty in passing increased costs on to the consumer. In fact, they add more profit in the process. Furthermore, by increasing production they are able to reduce the cost of each unit they produce. Such is the way which unregulated, expanding businesses meet inflationary spirals.

But for transit the story is quite

• **WARREN R. POLLARD** entered the transit field with an electrical engineering background. He joined the Georgia Power Company in 1922, and in 1933 became automotive supervisor of that company's 700-vehicle fleet of automobiles, trucks and buses. He was made manager of transportation in 1938. He resigned from Georgia Power in 1946 to accept the presidency of Virginia Transit.

Mr. Pollard has been active in ATA affairs down through the years. He served as president of the national association for the 1948-1949 term, and has served on the board of directors and various regional committees of the ATA.

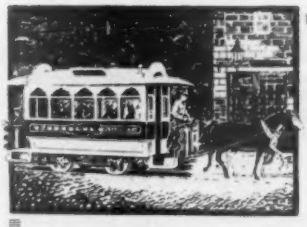
different. As we have seen, our labor demands run parallel to those of industry in general. But there are two very important differences. In the first place, we cannot pass this increased cost on to the consumer in the manner nor with the dispatch with which other industry does. In general it is only after many weeks of negotiation with the regulatory authorities that we are allowed to adjust our fares, and then by an inadequate amount. In the meantime the increased wages already granted have reduced our earnings, and in many instances new labor demands are confronting us before relief for the last wage adjustment is granted.

Challenging Times

The second difference is the relative importance of wages to the cost of a transit ride as compared to the cost of the products of other industries. Wages represent two-thirds of the cost of a transit ride, whereas wages only represent one-third of the cost for industry in general. So it can be readily seen that the same increase in wages has twice the impact on transit that it does on other industries. Also, other industries have a demand for the increased production that reduces unit costs. In contrast, the only way transit can realize an increased production is to serve more customers, and a shrinking volume of traffic has already been noted.

Altogether the transit industry is not in an enviable economic position. With some few exceptions our riding is continuing to fall off, our expenses are continuing to increase, we are approaching the point of diminishing returns in raising our fares, and the outlook is not too promising.

But we are not licked! In spite of all the problems with which we are confronted we have the brains and the ingenuity to overcome them. We have demonstrated this time and time again. And despite the current discouraging record of the industry as a whole, there still exist many enterprising transit properties which are rendering a real public service and in addition are earning a reasonable return on their investment. These trying times are a challenge to wide-awake management. If labor is costly we must make the maximum use of it by careful analysis of all operations and eliminate inefficiencies and outmoded practices. Schedules must be closely supervised and constantly adjusted to the need. Obsolete equipment which is worn out and fails to meet the present day demands, must be replaced with larger, more efficient and more attractive vehicles. And lastly, management must look in the mirror and do a candid job of self-analysis, to determine whether it is wide-awake, and energetically take advantage of all the opportunities within its grasp to lick the problems which plague our industry. I believe it can be done.



Transit Progress Day

Sept. 24, 1951

The Horse-Car • In 1851 the famous horse-car was put into general service in New York. This horse-drawn coach which ran on rails marked the beginning of formalized city transit systems as we know them today. Within a decade the horse-car had spread to Boston, Baltimore, Chicago, Philadelphia, Pittsburgh and Cincinnati. Throughout the Civil War and for many years thereafter, horse-cars helped build progress.—**From the ATA pamphlet, "100 Years of Transit Progress."**

Transit management can no longer afford to underestimate the potential of charter, excursion and tour business. It can . . .

- **Satisfy the public's yen for travel**
- **Put off-peak equipment to work**
- **Considerably brighten the revenue picture**

By Clinton D. Smith

Vice President and General Manager, Schuylkill Valley Lines, Inc.

How You Can Boost Revenues With Special Operations

TRANSIT MANAGEMENTS are no longer justified in considering charter, excursion and tour operations as incidental. The public more than ever is recreational bent and, therefore, group travel should be promoted to a maximum degree. Not only do the increased miles of special bus operation "dilute" the fixed expenses over a broader mileage area, but the revenue secured generally is a greater rate per mile than that obtained for fixed route operation.

Turning this recreational bent into more special bus revenue was probably never more important than now for the transit operator. As the cost of living has increased, we have not been able to raise our fares in proportion while, at the same time, our employees rate per hour and other expenses have increased in like or greater proportion.

And there are two other factors that affect the situation: (1) Saturday is rapidly becoming a Sunday with constantly increasing automotive competition and (2) evening riding is diminishing sharply due to both the automobile and television. So there are two full days (Saturday and Sunday), and the evenings of the other five days of the week, when excess equipment is stock on the shelves.

Every transit executive is facing this problem with his usual courage, and may find a partial answer to allay rapidly diminishing fixed route revenues. However, if he can more fully use his investment for other than fixed route service during the off peak days and off peak hours of the day, it will mean a great deal.

Stepping Up Promotion

I say this because of our experience in the Schuylkill Valley Lines, and I should like to pass this experience along to others in the industry. Our company has a total fleet of 44 buses, three of which are parlor coaches and are used only in charter bus service. However, all types of equipment are generally used, with 24 units available for the long haul demand of charters, excursions and tours in both interstate and intrastate service. We have enthusiastically engaged in charter bus, excursions and personally conducted tours for years. And now the company is accelerating its promotion of special operations and making the most of the Saturday-Sunday week-ends.

To give an idea of how effective this move has been, for the month of July, 1951, special bus operation revenues were 40 per cent of fixed route revenues or 29 per cent of total passenger revenue. The tabulation below reports the progress of special bus operations revenues:

Special Bus Revenues

Year	% Special Bus of Fixed Route
1934	3.61%
1935	4.92
1936	5.16
1937	5.52
1938	6.17
1939	7.35
1940	6.49
1941	6.09
War Years	——
1946	3.28
1947	5.95
1948	9.33
1949	10.39
1950	9.84
1951 (Jan. thru July)	11.80

You will note that in 1941, the last full year before World War II, our special bus revenue had increased approximately 100 per cent since 1934; and in 1950 an increase of simi-

lar amount applied in comparison with 1941. July, 1951, has surpassed all other months of any year.

Various transit companies, of course, can exploit special bus service in various ways. At Schuylkill Valley Lines we sell three types of special bus service in both intra and interstate areas: (1) charter bus, (2) one day excursions and (3) all expense tours. The latter are personally conducted, include all meals, admissions, and all tips and taxes. The advertised price per person is known before the patrons depart on tour; the only extras are those which are personal to the patron. Best hotels and dining places are carefully selected. As an indication of the scope of this detail, an analysis shows that, within the last three years, arrangements were made with the managements of 205 different hotels and dining places for the accommodations of SVL patrons of excursions and tours.

Charter Bus Sales Planning

The charter bus division, under the supervision of Major Frederick J. Whalen, creates over 75 per cent of special bus revenue. Long haul charters to locations within the several states are planned for the groups hiring the equipment. The long haul charters vary in length from two to six or more days; itineraries are so prepared that throughout the days of travel the group has the same service as do individual members of an all expense tour.

A full time charter coach assistant handles the promotional activities of the department and keeps a complete file of patrons and prospects. Duties of this person include making reservations to meet the sightseeing demands of all the groups, securing hotel reservations, and attending to dining arrangements when required.

Approximately 75 per cent of our tour and excursion patrons live in Philadelphia, South Jersey or suburban Philadelphia. These patrons use other common carriers (sometimes two or three of them) to reach Norristown for departure on SVL's tours and excursions. Some of the clientele travel from more remote points (such as Harrisburg, Baltimore, and Wilmington) and avail themselves of hotel accommodations in Norristown in order to start their journeys or tours.

The technique for promotion of all expense tours and excursions varies from that used by charter sales, which is directed from the office of the vice president and general manager. Since the sale of tours is on an individual basis, a mailing list, developed and refined over several years, is the chief source for securing patronage. Working from this list, periodic pamphlets are distributed announcing excursions and tours. For tours alone, a special tour folder is dispatched annually. The 1951 folder was made with the greatest economy, by simply using office prepared mimeographed pages, inserted in a printed folder.

Patronage of all expense tours stems from a highly travel-minded group of individuals—those who insist upon a packaged tour. They want all expenses paid. They will go places whenever something new and attractive is offered, and will pay the cost to the extent that they receive a high standard service. Recognizing this characteristic, SVL has formed the Schuylkill Valley Lines Tourist Club. A special mailing list is maintained for members of this group, who receive special notices of the operation of added de luxe tours and special one-day excursions. They also receive preliminary notice of the seasons itineraries and other special announcements.

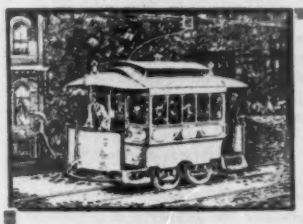
Active Tourist Club

The Tourist Club is informed promptly by first class mail of tours inspired by developments which warrant short notice of the days of operation such as a special one-day excursion to Hershey Rose Gardens. Announcement in this case was made on a postcard, printed in color, and provided by the Hershey Estates. This economical announcement produced a bus load of patrons, and requests from others to be added to the membership of the Schuylkill Valley Lines Tourist Club. When the club was first formed, and membership amounted to only 125, an ordinary postcard announcing a two-day trip to New York secured 35 patrons.

Charter and Tour Research

The management of SVL believes it imperative to develop the maximum amount of revenue from the operation of charters and tours. At the same time, of course, it does not discount the need for developing the maximum amount of revenue from operation of fixed routes, both by the setting of a proper fare and the maintenance of high standards of service. However, as previously noted, it is not possible to raise fares in proportion to the increased cost of living, and effecting the maximum efficiency of operation cannot reduce expenses sufficiently to overcome the fare deficiency.

Consequently, research is applied as intensively to the development of revenue from charters and tours as it is to the matter of adequate fare structure and efficient operation of fixed route. Current results have convinced the management that this policy is sound and productive.



Transit Progress Day
Sept. 24, 1951

The Electric Trolley • First electric transit line was tried out in 1886. Power was supplied by a small carriage which ran on an electric overhead wire and was attached by a flexible cable. Known as the granddaddy of the modern trolley car, the electric trolley proved a commercial success in trial runs in Montgomery, Ala. and Richmond, Va.—**From the ATA pamphlet, "100 Years of Transit Progress."**

Transit Cost Patterns in the

The transit industry has experienced periods of high costs before and survived. In discussing this question, the author points to the possibility that present inflationary trends may be leveling off, and that costs may become more stable.

By **J. Edward Heberle** • *Vice President & Comptroller, retired, Capital Transit Co., Washington, D. C.*

SINCE THE CLOSE of World War II the managements of local transit operations have had to deal almost continuously with two problems, either one of which would have been sufficient to test their ingenuity to the utmost.

On the one hand, there has been the decline in the use of mass transportation facilities. This was due in part to the greater availability of private automobiles and, in some instances, to the discontinuance of special war activities. It was also affected probably, in a degree, by the results of decentralization, as the small home owner moved to the suburban areas where branch stores and other neighborhood shopping facilities have been made available to him. Undoubtedly the extended use of television sets has had the effect of reducing our evening riding.

There are probably other contributing factors but, regardless of the reasons, most transit companies during the years since the close of the war have had continuing decreases in the number of passengers in greater or less degree. While in some cases it is possible to make reductions in mileage to compensate for such losses in passengers, the amount of curtailment in costs is always substantially less than the decrease in revenues.

The other problem which has beset management is the upward trend of operating costs. At the same time that revenues have had a downward trend costs have moved upwards, in most cases literally by leaps and bounds, as labor negotiations brought drastic increases in wage rates and imposed additional collateral costs.

The reason that increases in wage rates are of particular concern in the transit industry is because so large a part of the total operating costs is represented by labor. While other items have also increased in cost, the effect of such changes has not been so evident because of the smaller total volume of such expenses as compared to labor.

Generally speaking, wages and salaries represent about 70 per cent of total operating expenses. The payroll takes about 60 cents out of each dollar of operating revenues. An increase of 10 per cent in wage rates is equal to six per cent of total receipts. The record shows that increases of 10 per cent or more have been quite common during the post-war period.

Assuming a 10 per cent increase in wage rates at the time there is occurring a six per cent decline in traffic, the total effect is equal to a reduction of 12 per cent in operating revenues. Almost invariably the result is to wipe out all net income and put the operation in the red. The only way out of such a dilemma is an increase in the rate of fare.

Regulatory Bodies Slow

From this point forward the sequence of events depends upon whether the property is privately or municipally owned and operated. In the latter case, the machinery for putting into effect an increase in fare is relatively simple and expeditious in its operation. Usually steps are promptly taken to bring about a proper balance between revenues and expenses.

The course for the management of the privately owned property is quite different. No change in the rate of fare can be made without the approval of the regulatory body having jurisdiction, or at least without its acquiescence. In most cases a formal application for the increase in rates must be made to the public service commission. Too frequently this is the start of a proceeding that may consume several months before a higher fare is approved by the commission. Meanwhile the company has been paying the higher wage rates and carrying on its operations at a loss. About the time the order granting the fare increase is issued the union presents its demands for the next contract year and the process starts over again.

This procedure has been repeated on each property a sufficient number of times so that, in some instances, management has acquired an inferiority complex and has become unduly sensitive to criticisms of the rate of fare.

I am not one of those who believe that, regardless of the cost of providing service, there is a limit to the fare that can be charged. If our business is to continue as a private enterprise the charge must be sufficient to pay costs and a profit. We are charged with the duty to operate as economically as possible and in that field we must make certain that we have completely fulfilled our obligations.

There are those who contend that it is poor merchandising to increase our fares in the face of a falling market, that is, with decreasing traffic.

Postwar Period

For this reason quite frequent criticism is directed at management for asking increases in rates of fare to provide adequate earnings, when the main reason that is advanced is the reduction in revenue brought about by decreases in passengers. In fact, we are told that the way to increase our revenues and profits is to increase the amount of our service, or to lower fares, or both. Both plans have been tried and found wanting.

In view of the conditions that confront us and with past experience as our guide, I suggest that we review certain principles which I believe to be fundamental, and proceed in our thinking from there. These fundamentals are . . .

- The service we render is essential to the community.
- The community is best served if the service is given by a single agency rather than by a number of competing agencies.
- The service is more economically operated as a private enterprise than if publicly owned and operated.
- If it is to continue as a private enterprise it must be paid enough to earn a profit for its owners over and above all costs of operation.

With these principles as our creed, we should have no apologies to offer for any fare that is required to meet the costs of operation and provide a reasonable profit. Our Supreme Court has said that we are entitled to a profit that will attract capital to the enterprise.

If the community is unwilling to pay for its transportation as it uses it, the alternative for the city is to purchase the system and run it as a civic enterprise. Under such conditions the community may fix any fare that it desires to be paid at the time of the ride, and the remainder of the cost can be assessed as a tax. There is, of course, nothing new in this plan. It is already in effect in a number of cities.

It may be that we are about at the end of this period of inflation and that our costs will tend to be more stable. It is true that we have experienced and survived rising costs of equal proportions percentage-wise before. The history of Capital Transit Company and its predecessors may be typical of a number of other companies.

The operation started as a horse car system about 90 years ago. At the end of the first 50 years, or in 1911, the operators' wage rate had increased 100 per cent and the rate of fare had decreased 16 2/3 per cent. The wage rate increased from 15.4 cents to 30.8 cents per hour, and the original straight five cent fare had been modified to the extent of a ticket that sold at the rate of six for 25 cents.

During the next 10 year period, from 1911 to 1921, which you will recall included the first World War, the operators' rate increased 100 per cent and the rate of fare increased 80 per cent. The hourly rate increased from 30.8 cents to 61 cents per hour, and the fare from 4 1/6 cents to 7½ cents.

In the next 10 year period, from 1921 to 1931, operators' wages increased about three per cent and the rate of fare at the end of the period was exactly the same, seven and a half cents, as it had been at the beginning. This period was marked by the introduction of the cut rate taxicabs and by the great extension of the use of private automobiles, with consequent losses in patronage by mass transportation facilities.

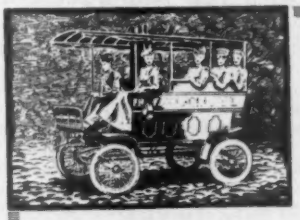
In the next 10 year period, from 1931 to 1941, occurred the depression and the introduction of the "New Deal" into the arena. Operators' wages increased 35 per cent, from 63 to 85 cents per hour, and the rate of fare went up about 11 per cent to eight and a third cents. It was during this period that substantial economies in operation were realized by the change from two-man to one-man car operation.

Swing to Stability Due

The next 10 year period brings us up to date, from 1941 to 1951, and includes all those events which are relatively fresh in our minds, including World War II. During this period operators' wages increased 100 per cent, from 85 cents to $1.70 per hour, and we now have an application before the Public Utilities Commission for a straight 15 cent fare, which will mean an increase of 80 per cent from the fare in effect 10 years ago.

It is at least of passing interest that the percentage increases in operators' wages and in the rate of fare during this last 10 year period are precisely the same as for the 10 year period from 1911 to 1921 which included the first World War.

Let us hope that history will repeat itself and that we will, during the next decade, find a period of stability that will be in strong contrast to the lack of that quality which has been our lot in the past 10 years.



Transit Progress Day
Sept. 24, 1951

The Earliest Bus • In 1899 great interest was shown by everyone in the new "horseless carriage" which was a sensation at the turn of the century. Experiments were made with multiple-passenger auto-bus vehicles, but few were successful. This is a steam-driven auto-bus, introduced in Des Moines, Iowa, in that year. The gas-fueled bus became popular years later.—**From the ATA pamphlet, "100 Years of Transit Progress."**

SALESMANSHIP...

An Important Key to Transit Survival

By Roswell F. Thoma • *President*
Niagara Frontier Transit System, Inc.

IT IS WITH some hesitation that I as a newcomer venture to express an opinion as to the crucial problem confronting the transit industry. My father, a practicing physician for many years, used to tell me that it is sometimes easier to diagnose an illness than it is to prescribe the remedy.

With a background of little more than a year in this fascinating business, I would not pretend that I know all the answers. Men of great ability and intelligence have devoted the best years of their lives to this business of carrying people back and forth. They are far more intimately familiar than I with its history and its present problems.

However, I have observed that even with all their years of experience they do not agree as to the relative importance of the industry's problems. Some will argue, with good reason, that engineering and operating questions are fundamental. They will point to rapid and continued increases in costs of labor and materials, to the sometimes rather tardy and inadequate relief afforded through fare adjustments. They will demonstrate the need for the utmost in operating economies and efficiencies, a field in which the engineering and operating skills reign supreme.

The financial men will back them up, supplementing their arguments by pointing out the imperative need of improving the credit position of the industry. Perhaps to some of them the balance sheet may seem more interesting than public timetables; the schedule of maturing obligations more important than possible need for service extensions or for new equipment.

Our legal friends will make an equally potent argument for the basic importance of the functions of their profession. To them, the law and the legal cases are fundamental.

I do not disagree with any of these gentlemen in their views that correct solutions for our operating, financial and legal problems are of primary importance to every transit company. But crucial as these problems are, it seems to me that there is one of even more pressing and immediate urgency.

Salesmanship, as I see it, is the key to our survival; a type of salesmanship that must permeate our organizations from top to bottom; that must be given first consideration in the analysis of engineering, operating, financial and legal problems. For I am convinced that the great hope of this industry lies not in more efficient operation, important as that is, not in better accounting or credit practices, not in changes in the law and its interpretations, but in the selling of our product. I am sure every transit man will agree that if we could fill our empty seats, most of our operating, financial and legal problems would disappear.

Salesmanship Must Begin with Top Management Policy

The great question, of course, is "How?" I have heard it said that salesmanship begins with the ride or with the vehicle. That, I think, is far too late. Salesmanship must begin with top management policy. It should extend into the laying out of our routes, the building of our schedules, the selection of our equipment, the hiring and training of our employees. The urge to SELL our service should permeate every phase of our business.

Just about this time I can hear someone say: "We've tried all that before." I have no doubt that this is true; but the more deeply I study the conditions with which we are confronted, the more firmly am I convinced that the sales approach, applied constantly and vigorously, is the real hope for the future. Note those words "constantly and vigorously." No waving of a magic wand will do the trick. Hard work and plenty of it, from top management down, will be required. We have keen and vigorous competition to meet, competition that has made the automobile industry dominant in American life.

From the standpoint of cost, we have them licked. It costs far more to drive the cheapest jalopy to work than it does to go by bus or streetcar. Even when four workers club together, as the San Francisco Planning Commission pointed out recently, public transportation could still take them to work more cheaply. Taking the American Automobile Association figure of 8¼c a mile, the worker who drives six miles each day to and from work is spending from six to ten per cent of his day's pay for the luxury of private transportation. That we know is out of balance; yet millions are doing it.

Nor can the average private automobile compete for dependability with our sturdy modern transit vehicles, well maintained, well equipped and dependable. Furthermore, the safety record of the transit industry is far superior to that of private motorists as a group. For a modest fare we offer a professional driver, and the use of a vehicle costing more than a modest home.

Why is it then that such vast numbers of our fellow citizens prefer to roll their own transportation? Why do they incur the greater expense, the greater hazard, the greater responsibility? Is it not because we have failed to sell them the advantage of public transit.

We cannot close our eyes to certain factors offsetting to some degree the greater economy, safety and convenience of public transportation: the walk to the nearest stop, perhaps a short wait for service, the possibility that seats may not be available in rush hours, the slight delays at passenger stops, perhaps the necessity for transferring. Even so, we've a good, saleable product.

I need hardly say that it behooves us to know as much as we can about that product. All too often we, like our customers, bypass our own product, but most of us as motorists know plenty about the competition.

● **ROSWELL F. THOMA,** a native Buffalonian, and new president of the Niagara Frontier Transit System, is well qualified to speak on the subject of salesmanship and merchandising as the result of a varied career in the business field. In addition to his new transit assignment, he is president of the Thoma Paper Box Company, treasurer and director of the McDonald Products Corporation, and treasurer of the Wren Products Corporation. He is also a director of the Liberty Bank of Buffalo. He was one of ten directors named to the board of the reorganized Niagara Frontier Transit System, and was recently elected to the presidency of that organization.

The automobile of course has its many uses, but like alcohol it can become a habit. Even after 15 months in the transit business, I still find that it sometimes requires a definite act of the will to "reach" for a bus or a streetcar instead of the private automobile. And all of us know that even some of our own employees travel to and from their work in their own automobiles, although they could use our service without cost.

It would pay us all to analyze the factors that lead to this expensive choice, for somewhere in those factors lies the answer to our sales problem. Naturally I am not advocating more extensive use of our own product by transit workers merely to increase the rush-hour load by several hundred non-revenue passengers. The point is that, properly sold on the importance of their off-duty observations to the success of their employer and their own job security, these men and women can become the extended eyes and ears of management.

Perhaps we have not paid enough attention to the packaging of our product. My experience has been largely in the field of modern packaging, including design and manufacture of staple and fancy display boxes. Time after time I have seen an improvement in packaging translated into increased sales volume that far outweighed the slight increase in cost. As one specific example, let me recite the story of a friend who some years ago was struggling to sell an automobile accessory at $1.00. He was not particularly successful until we designed a package suggesting something of the luxury and richness of a jewel cabinet. The addition of a twenty-odd cent gift box container transformed a $1.00 failure into a $2.00 success.

Cannot the same principle be applied to our transit vehicles? It seems to me that much of our engineering skill has been devoted to the mechanical rather than to the human elements. Why, for example, should a young lady passenger have to choose between closing the bus window and sacrificing her new hair-do? Why should the width of buses be limited by state regulations to such a degree that two passengers of average build cannot sit side by side on a cross seat in comfort? Why must floor levels go higher and higher, making it more difficult for the elderly, the infirm and the very young to board and leave our vehicles? Why does the engineer who determines the window spacing keep his plans a deep, dark secret from the designer of the seat layout?

Assuming that we have done our utmost in offering a convenient, comfortable, attractive vehicle, we want to be sure that it is presented to our customers to the best advantage. That means safe, on-schedule operation, with routes designed to serve the reasonable needs of the majority, stops conveniently located. Even more important, it means instilling the sales idea into the mind and into the manner of each operator. We think we are doing a reasonably good job along these lines here on the Niagara Frontier; but even so exceptions will arise.

This is of course a common problem, calling for the selling of the idea of salesmanship to the man who represents us to our customers. The elimination of friction between our salesmen and our customers, and the further development of a spirit of service, will tell the world that we mean business.

We Need Steady and Vigorous Advertising at the Local Level

I believe that we can use the tools of advertising and public relations successfully in our efforts to hold the business that we have and to attract new riders. Without permitting myself to be drawn into the controversy as to whether we need a national advertising or public relations campaign, I can say without fear of contradiction that we need constant efforts along these lines on the local level. If the use of our product will save money for our customers, why not tell them so? Why not tell them vigorously and repeatedly? Why not use every medium available to us at reasonable cost?

It can be done, briefly and forcefully, and at low cost, through car and bus cards inside and outside our vehicles and through read-as-you-ride folders. It can be done perhaps more thoroughly, if at somewhat greater cost, through use of paid newspaper space, radio, television and other advertising media that have demonstrated their value.

It can be done, we think, by special representatives such as our Service Aides, who ride our buses, assisting passengers, distributing timetables and advertising literature and keeping us in immediate touch with the pulse of public opinion. In recent weeks we have sent these uniformed young ladies into large industrial parking lots where they distribute to homeward-bound workers folders showing the economy and the convenience of using public transportation. What the result may be I cannot tell; but at least we are making the effort.

The brains, the ingenuity and the energy of management and staff in this industry can be devoted to no more productive long-range objective, in my opinion, than to this basic problem of salesmanship for survival.

Maintenance Economies . . .

By Hy Feldman
Supervisor Automotive Maintenance
Capital Transit Company

AS A RESULT of the present international situation, coupled with our expanding economy, we are all faced with the problem of increased labor costs and increased material costs.

Except for the numbers involved, this present situation is identical in a great many respects to the general situation some 10 years ago. With this in mind, it would appear that the maintenance man would do well to reflect upon his actions of 10 years ago, and upon the results of the things he did at that time. It would likewise be well to reflect upon the expedients employed by other people and to look again, most carefully, at results. Most important is the willingness to recognize mistakes made, since we are all prone to make the same mistakes again.

Some Parts Are Hard to Get

A great many necessary parts are difficult to procure. Aside from that, the prices charged for new parts (when available) are tremendous. During the war period Capital Transit Company made great efforts along the lines of salvaging parts. Every means at our disposal was employed to enable us to do a better salvaging job. We became so salvage-conscious that efforts were made to salvage everything to the point where we were reclaiming parts which were not economically salvageable.

During the war this situation was not as serious as one might expect because, in a great many instances, price was no object. But, rather, the important thing was to get a serviceable part and render a vehicle ready for revenue service. After World War II, when parts became more readily available, we began to inspect our salvage methods more closely. As a result, we found several instances where it was far more economical to purchase a new part than to salvage the old one. Such studies, under any circumstances, should be continuous.

The word "salvage," implies to most people that money is being saved by virtue of the fact that a new part is not being purchased. A study at frequent intervals for the purpose of determining advisability of continuing the salvage is recommended, providing the maintenance man has courage enough to include everything in his cost analysis.

A great deal of effort can be spent profitably searching into the possibilities of fuel savings. Manufacturers do not even imply that their buses are engineered for any specific property. But, rather, they do the best job possible to manufacture a vehicle which can be pulled off the shelf and made to operate satisfactorily anywhere—north, south east or west; in hilly or flat country; urban or suburban service. And they do a pretty good job of it.

Engineer Buses, Save Fuel

However, if an attempt is made to engineer the vehicles to the specific operation, there are tremendous potential savings in fuel. On a property such as this, for instance, one-tenth of a mile per gallon represents about $55,000 per year. It was the simple calculating of this figure which stimulated us to research the matter. We have, to date, manufactured certain devices for accurately setting carburetor float levels to specifications established by ourselves. All jets going into rebuilt carburetors are flow-tested against master jets. On almost 50 per cent of our fleet, we are completely re-jetting the carburetor. We have established new running maintenance procedures and, above all, we stimulated our people into carburetor and carburetion consciousness. These things came about through no accident. They were carefully planned and researched and the results are worth many times the effort expended, because we now have practical visions of our average annual fuel economy figure going up about 0.4 of a mile per gallon from the time the program started.

Careful consideration of labor-saving devices is always an excellent idea. I would like to cite as an example the power-sweepers procured by us at a cost of some $2,300 each. These released a great many men for other work and, at the same time, allowed us to reduce our personnel by one man for each sweeper purchased.

Portable Drums Save Money

I would like to refer, likewise, to the portable brake drum lathes procured by us and placed in each operating garage. Our former practice was to remove the wheel, hub and drum assembly, disassemble it, and send the drum to the main bus shop where it was machined. Then it was returned to the garage, reassembled, and replaced on the bus. The use of these portable brake drum lathes completely eliminates the assembly processes, the transportation procedure and the machining procedure in the bus shop. And, at the same time, it is getting us a much more satisfactory job. The most important consideration, however, is the fact that it allows us to reduce our personnel by the number involved in the handling and machining operations described above.

The point I am attempting to make here is that a lot of people procure labor-saving devices which probably do save labor. But that labor has been transferred to other work so that the net reduction in dollars expended for labor, as a result of the purchase of the labor-saving device, is zero. The only way for a labor-saving device to save labor is for it to allow you to reduce personnel.

I have heard many maintenance men brag about their ability to extend periods between oil-drain and changes, leaving the impression that the longer they allow the equipment to run between oil-drain and changes, the better off they are economically and maintenance-wise. In many cases this is untrue and is a fallacy in the thinking of these men. I make no reference here to the condition of the

Let's Be Sure They're Economies

equipment nor to the effect that the crank case lubricant has upon that condition. I refer only to economies. It is a well-established engineering fundamental that the rate of oil consumption increases in proportion to the length of time that the oil is within the crank case.

Careful analysis, I believe, will reveal that there is a point where this rate of consumption will cause more oil to be purchased than if the oil were changed more often. Our experience along these lines runs something like this. Several years ago we changed our oil at 3,000 miles. A lengthy research program was undertaken for the purpose of establishing the best period. This program revealed that we purchase less oil if we change oil at 2,000 miles than if we changed it at 3,000 miles. We then changed our period to 2,000 miles and found this was entirely true. Last year, we again decided to see what would happen to the overall oil purchases if we increased the period between drain. We began changing oil at 4,000 miles and, though we changed our oil half as often as before, we found again that we were purchasing more oil than at 2,000 miles. So we switched back. Don't let this kind of false economy fool you!

There is a tendency on the part of a great many maintenance people to regard the cleaning of vehicles as a necessary evil, and therefore to make no great effort to engineer their cleaning practices. Tremendous sums of money are expended on vehicle cleaning. This reason alone, I believe, is enough to require the maintenance man to study his practices.

We recently started a new cleaning stunt which we feel will pay off. After carefully checking our procedures, we determined that perhaps a gang of cleaning experts could be developed. That is, a team of men, with a carefully trained supervisor, who did nothing day in and day out but clean the interiors of vehicles. A special bus was set aside for their use. A batch of special tools, brushes, etc., was procured. A great many test buses were cleaned in our time-and-motion study efforts, with the net result that we now have this team of experts fairly well organized.

We can visualize in the not-to-distant future that this team will be able to do practically all of the interior scrubbing of buses, releasing the cleaners in the garages for their regular running cleaning jobs. The main thing to emphasize here is that our buses are going to be a lot cleaner interior-wise and, at the same time, the garage foreman is relieved of this troublesome problem. We are even beginning to believe that the same kind of thinking might be employed in other places.

Training Is Valuable

The value of training and the value of the proper type of supervision at times like these cannot be overestimated. It is my opinion that the single most important way of licking these problems, thrust upon the industry by the present situation, is "proper supervision." We must carefully reflect upon the abilities and capabilities of the men on the line who are running the show for us. For it's they who are spending the money. It is they to whom we have given the blank signed checks, and it is they we must hold responsible.

I would not want to end this article, which concerns the savings of dollars, without mentioning my favorite gripe. The bus maintenance man works himself to death maintaining all sorts of "cats and dogs," with all sorts of variations in wiring, lighting, propelling equipment, flooring, dimensions, front-end designs, rear-end designs, suspensions, and so forth and so forth. Our streetcar maintenance brother, however, has his lovely PCC cars, all of which are fundamentally the same and give rise to problems which are fundamentally the same.

Now, why doesn't somebody do something about the manufacture of a PCC bus which could incorporate the results gained from the talents of the individual manufacturers and, at the same time, give to the maintenance people a bus which is fundamentally the same, regardless of who manufactured it?

Objectives for Motor Coach Designs have been prepared (though I don't believe have been kept up to date). And these have had liberal and wide distribution. So far as I can tell, that's as far as it has gone! Some concrete action should be taken along these lines, and then the maintenance man's biggest problems would be wiped out.

Transit Progress Day
Sept. 24, 1951

The Trackless Trolley · The first trolley-bus, employing an overhead electric trolley but requiring no tracks, was put into service on the Laurel Canyon route in Hollywood, Calif. This was in 1910, when William Howard Taft was in the White House. The new vehicle ran on rubber tires, providing a smooth ride and giving greater flexibility of operation.—**From the ATA pamphlet, "100 Years of Transit Progress."**

The 1951 Bus

1951 BUS SHOW IN PRINT · BUS TRANSPORTATION

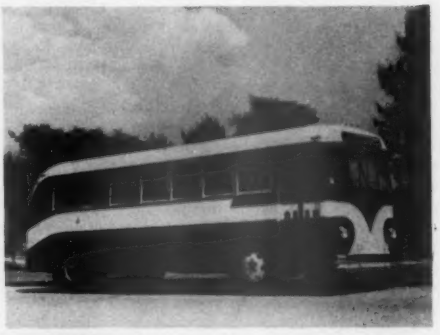
Featured in this special display section are the 1951 models of motor buses, trolley buses and equipment. All photographs reproduced here were taken within recent weeks exclusively for BUS TRANSPORTATION. This pictorial showing represents the latest developments of manufacturers of vehicles and equipment for intercity and transit service. Vehicle manufacturers are . . .

ACF-Brill
Aerocoach
Beaver
Bock
Cub
Fitzjohn
Flxible
G M Coach
Mack
Marmon-Herrington
Pony Cruiser
Pullman-Standard
Ree
Southern Coach
St. Louis Car
Transit Buses
Twin Coach
Wayne Works
White

More new bus Equipment and Supplies . . . . see Contents, pp 1.

1951 BUS SHOW IN PRINT · BUS TRANSPORTATION

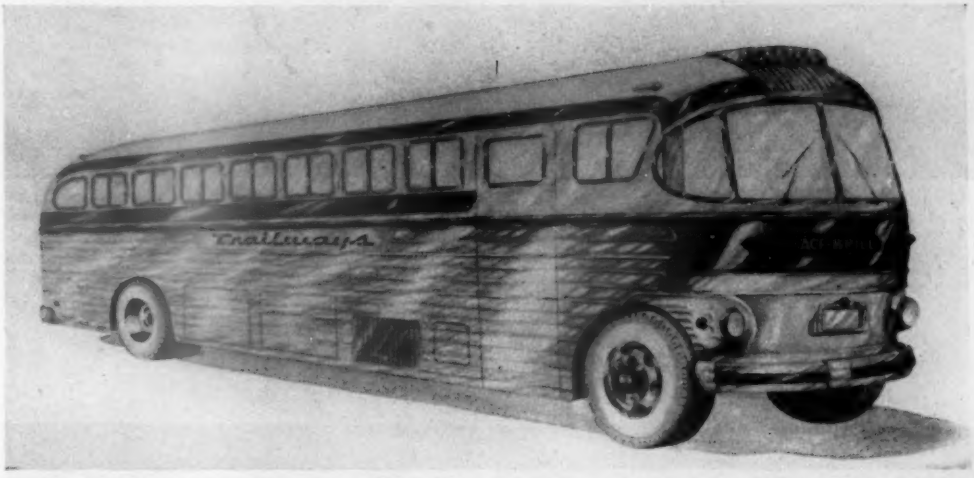
ACF-Brill



★SUBURBAN—Model SU-37 seats 37 passengers in high-back seats. Has 450 cu. in., 162 hp. engine.

★TRANSIT—Model C-44 seats 44 passengers and is powered by 707 cu. in. Hall-Scott underfloor engine, rated 208 hp. Also available in 45 passenger suburban type with 220 hp. engine.

Show in Print



★INTERCITY—Artist's conception of new Model IC-41A. Seats 37-41 passengers. Incorporates design refinements and greatly increased baggage facilities. Powered by Hall-Scott 190 engine, rated 220 hp. at 2,200 rpm.

★TRANSIT—Model C-31 seats 31-33 passengers with center exit and up to 36 with one door entrance-exit arrangement. Aluminum and steel integral construction is used. Power is supplied by 406 cu. in. engine, rated 149 hp. A smaller C-27 seats 27 to 31 passengers.

Please turn the page. These and the 18 pages following present the very latest in modern transportation vehicles and equipment for transit and intercity service.
→

★INTERCITY—Model 373M seats 37 passengers on reclining chairs. Fluted sides and double-length sliding windows enhance appearance while a five-ton air conditioning system assures passenger comfort. Improvements include four-speed transmission, larger clutch and new engine suspension. Frame is all-welded tubular design.

1951 BUS SHOW IN PRINT
Aerocoach
BUS TRANSPORTATION

★SIGHTSEEING — The 373A, Astraview Sightseeing coach, with 41-passenger, non-recliner, or 37-passenger reclining seats, contains all the improvements of the 373M Intercity.

★INTERCITY—Interior of intercity Model 373M, showing generous parcel racks, large ducts providing a flow of conditioned air. Note the use of thermoplastic ceiling panels available in color.

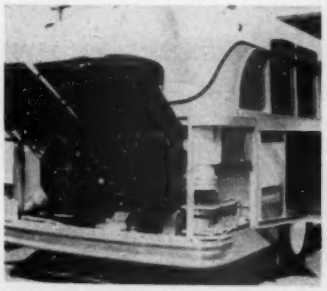
★INTERCITY—Model B-29 is available with 29 recliner or 33 stationary seats. Cummins diesel or International gasoline engines are optional. Exterior panels are stainless steel.

★SIGHTSEEING—The Skyliner is available in 29, 33, 37 or 41-passenger capacity with diesel or gasoline powerplants optional. Stainless steel panels, air-conditioning optional.

★INTERCITY — 5000 Series Mainliner features Tropic-Aire-Carrier air-conditioning, 33 or 37 passenger capacities. Has Cummins diesel or International gasoline engines.

★TRANSIT—Cityliner Model FTG seats 29 passengers and is powered by a 131 hp. Hercules JXLD gasoline engine.

1951 BUS SHOW IN PRINT
Fitzjohn
BUS TRANSPORTATION



★ENGINE COMPARTMENT of FTG Cityliners and Suburbanliners. Body corner panels open wide for servicing.

★INTERIOR of Cityliner with single and double seating arrangement to give maximum standing capacity.

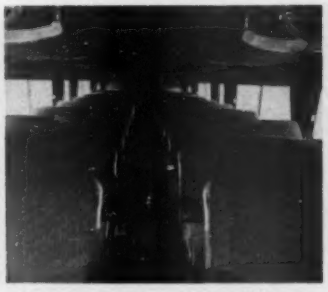
★TRANSIT—37-passenger Model FTG Cityliner has transversely mounted rear powerplant, available in gasoline or diesel powerplant of Hercules design.

★SUBURBAN—Suburbanliner Model FTG seats 33 passengers on forward-facing deluxe chairs, has depressed aisle, interior luggage racks. Two sizes gasoline engine and a diesel are optional. Other models seat 29 and 37 passengers.

★SIGHTSEEING—Visicoach sightseers are available in 25, 29, 33 or 37-passenger capacity. All models are glass roofed and can be had with single or two-speed rear axles. Side windows are movable for extra ventilation.

★AIRPORT—Visicoach Airporter has air-operated clutch and five-speed synchronomesh transmission. Extra-large baggage carrying capacity is provided for passengers.

★AIR-OPERATED DOORS are available at extra cost on suburban models. Doors are two-fold ply metal actuated by NP door engine.



★SEATING includes five-position recliners, high-back non-recliners and low-back non-recliners. Standee grab rails and folding aisle seats available.

★INTERCITY—Visicoach intercity and suburban models are available in 25, 29, 33, or 37 passenger capacities. Powerplants include 152 hp. Buick FB320 gasoline and Hercules 142 hp. DWXLD diesel. Air conditioning available.

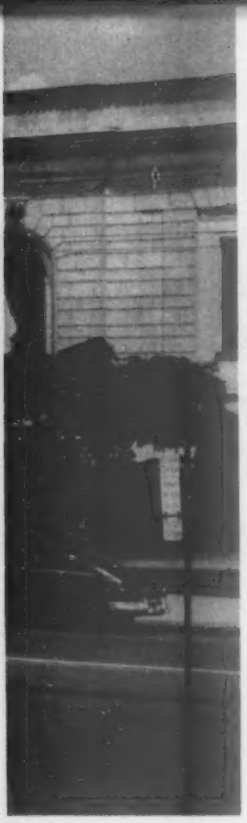
★TRANSIT—TDH-5103, GM's newest, a 51-passenger coach of 102 in. width, designed for main-line, heavy traffic service. Wide entrance doors and 26 in. aisles make for ease in handling incoming and outgoing passengers. Engine is a 200 hp. two-cycle diesel with hydraulic V-drive.

1951 BUS SHOW IN PRINT

GM Coach

BUS TRANSPORTATION

★TRANSIT—A 31-passenger coach of the 27-31-passenger series. It is powered by a 207 cu. in. engine with Hydro-Matic drive and automatic transmission.



★TRANSIT—A 45-passenger coach with the capacity and power to handle heavy loads on a fast schedule.

★TRANSIT—A 36-passenger coach of the 36-51-passenger series. Wide aisles and standee windows are features.

★INTERCITY—A 41-passenger intercity coach powered by 200 hp., six-cylinder diesel. A 37-passenger model is available with a four-cylinder diesel.

★SUBURBAN—A 45-passenger suburban coach with all seats facing forward. Power source is a 200 hp. two-cycle diesel with hydraulic V-drive.

1951 BUS SHOW IN PRINT

Mack

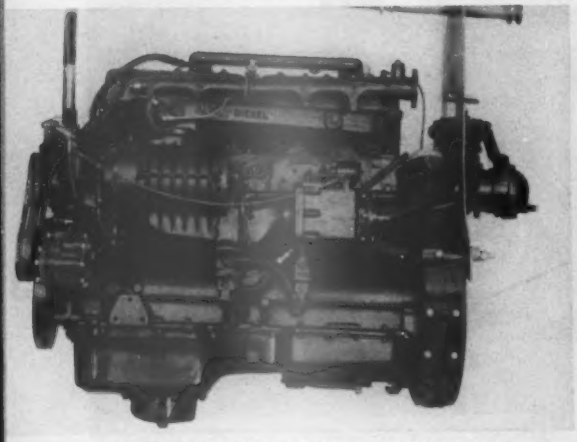
BUS TRANSPORTATION

★HYDRAULIC STEERING gives finger-tip control. Mechanical connections provide safety factor. Front wheel turning angle is 53 deg.

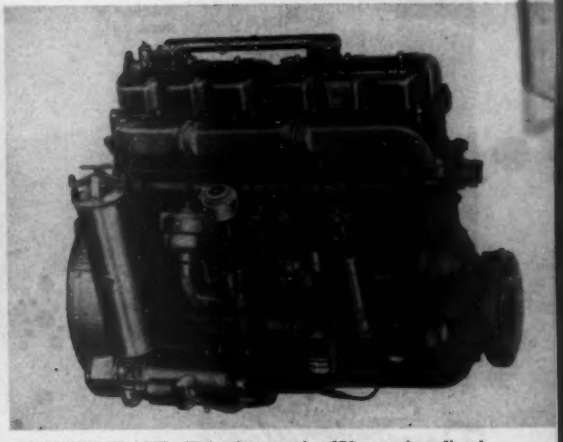
★SUBURBAN—This 45-passenger model for suburban or intercity service is powered by a 672 cu. in. supercharged diesel.

★TRANSIT—Model C-37, designed for medium duty service, seats 37 passengers. Its 672 cu. in. four-cycle diesel develops 165 hp.

★TRANSIT—Model C-50 seats 50 passengers and is available in both 96 and 102 in. width. It features hydraulic steering, extra-wide doors and easy maneuverability in city traffic.



★222 HORSEPOWER at 2,200 rpm and 640 ft. lb. torque at 1,400 rpm is rating of this END C72 super-charged diesel engine. Both operate on #2 fuel oil.



★POWERPLANT. This four-cycle 672 cu. in. diesel engine is rated 165 hp. It features single-lobe, energy-cell combustion, automatically variable injection timing.

1951 BUS SHOW IN PRINT

Marmon-Herrington

BUS TRANSPORTATION

★TRANSIT—Model 8M2B (at left), a transit coach designed to seat 32 passengers and provide maximum standee room.

★TRANSIT—Model 8MB (at right), a 27 passenger design with center exit door. Powerplant is in rear.

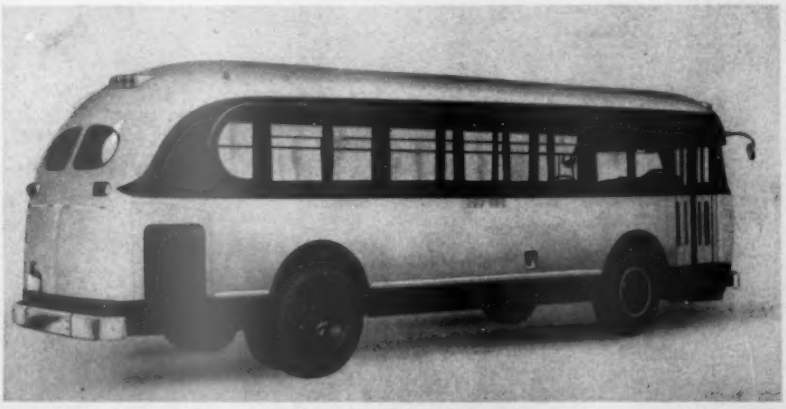
1951 BUS SHOW IN PRINT

Pony Cruiser

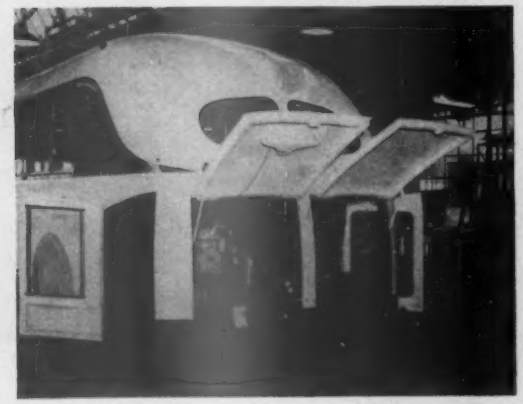
BUS TRANSPORTATION

★INTERCITY—A 25-passenger coach with non-reclining seats. A companion model which seats 29 is 36 in. longer. Chevrolet components are used throughout and Ford and International are available.

★TRANSIT—Model O2 seats 32 passengers and provides generous standee room. Separate entrance and exit doors facilitate passenger movement. Windshield is extra wide.



★SUBURBAN — Model O5 suburban type coach seats 35 passengers. It has 179 in. wheelbase and is powered by a 427 cu. in. Continental engine mounted at rear.

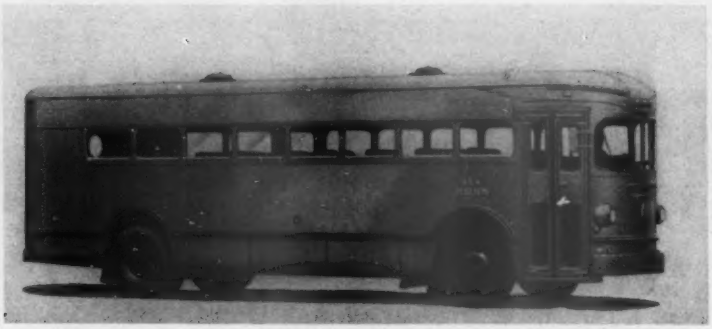


★ENGINE COMPARTMENT — Rear engine compartment of Models O2 and O5 is design for easy accessibility. Center post between two rear doors can be quickly removed by simply taking out four bolts.

1951 BUS SHOW IN PRINT

Transit Buses

BUS TRANSPORTATION



★CONVERTIBLE, a utility vehicle which can be converted from a passenger coach into a cargo truck, or vice versa. Equipped with baggage racks and baggage or freight carrying space. Propane or gasoline power are available.

1951 BUS SHOW IN PRINT

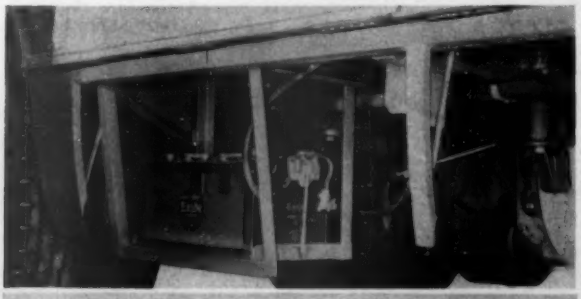
Twin Coach

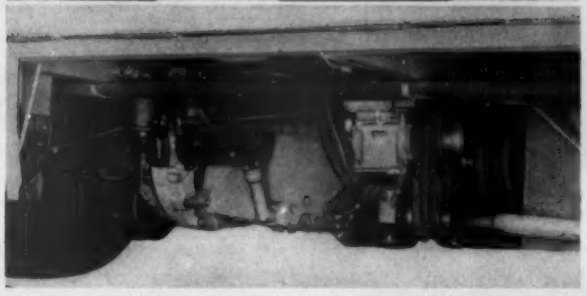
BUS TRANSPORTATION

★TRANSIT—The new 40-passenger **Fageol-Liner**, latest Twin Coach development which utilizes **Fruehauf** body components. Powered by Fageol gasoline or propane engines or Cummins diesel.

★TRANSIT—51-passenger propane-powered heavy duty coach. This is one of 500 propane-powered coaches now being used by Chicago Transit Authority.

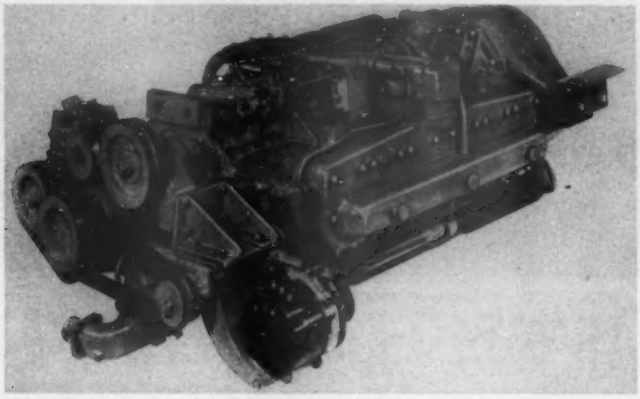
★TRANSIT—45-passenger propane-powered coach out of a fleet now in service of Omaha & Council Bluffs St. Ry. Co.





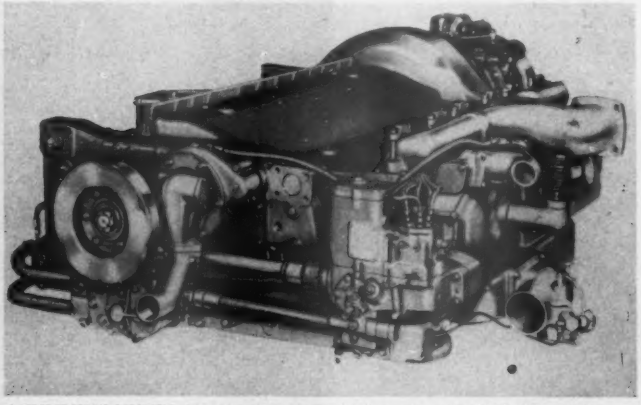
★ACCESSIBILITY of underfloor-mounted mechanical units in the Fageol-Liner, has no structural interference below floorline.

★UNDERFLOOR POWERPLANTS are available with Fageol gas or propane engines or Cummins diesels.



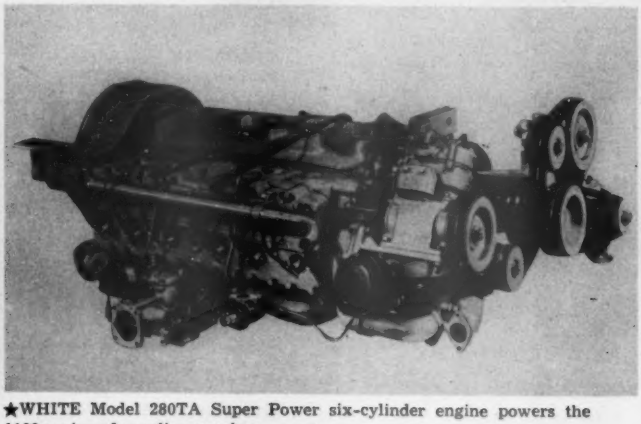
★WHITE Super Power 24A, 12-cylinder horizontally opposed gasoline engine has 671 cu. in. piston displacement.

★DRIVER'S SEAT in 1144 coach is specially designed for ample leg-room. Instrument panel conveniently located.



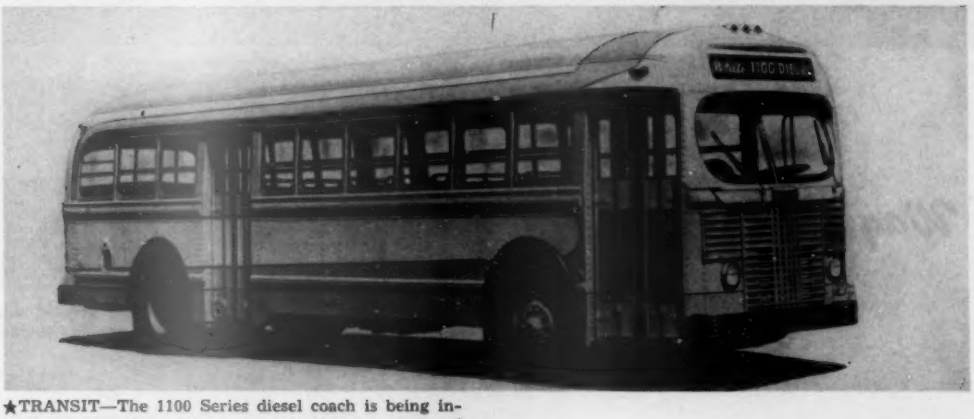
★CUMMINS NHHBI-600 diesel engine which powers the 1100. Mounted underfloor, 'midship for direct line drive it provides 200 hp. at 2,100 rpm. Piston displacement is 743 cu. in.

★TRANSIT—Interiors features modern styling, wide aisles and roomy seats.



★WHITE Model 280TA Super Power six-cylinder engine powers the 1100 series of gasoline coaches.

★TRANSIT—Model 1144 seats 44 passengers. It is powered by "Super Power" underfloor gasoline engine.



★TRANSIT—The 1100 Series diesel coach is being introduced in a line of large capacity coaches designed for heavy duty service.

★SUBURBAN—The Model 1144-S has a 24A, 671 cu. in. engine. A 504 cu. in. engine is standard.

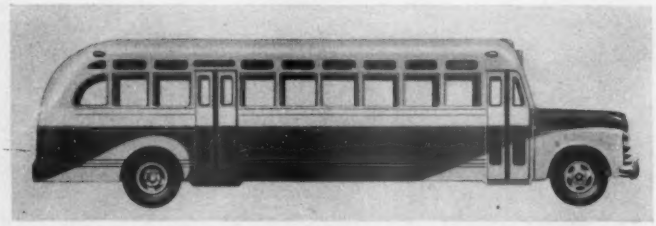
Southern Coach

1951 BUS SHOW IN PRINT — BUS TRANSPORTATION

★TRANSIT—Model S-41, a 41-passenger coach with optional power-gasoline, propane or diesel engines. Hydraulic or mechanical transmissions are optional. A 32-passenger transit and a 36-passenger suburban coach also are available.

Wayne Works

1951 BUS SHOW IN PRINT — BUS TRANSPORTATION



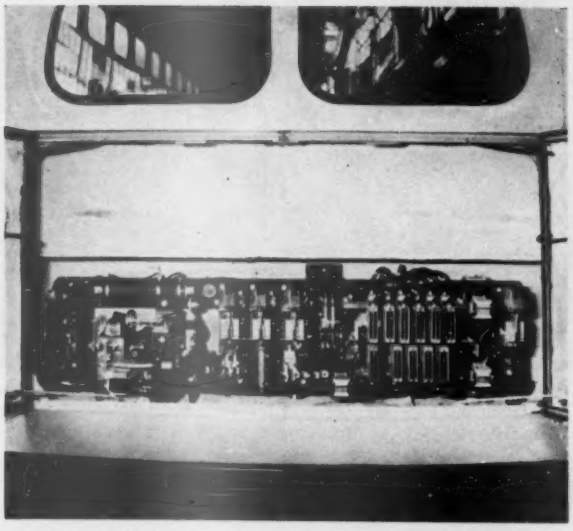
★TRANSIT-INTERCITY—Adapted for either city or intercity service, this unit is available in either 71 or 77-in. headroom and in various chassis lengths to accommodate various passenger capacities.

Ward

1951 BUS SHOW IN PRINT — BUS TRANSPORTATION

★INTERCITY—Model 18-S seats 18 passengers on high-back recliners. Power supplied by six-cylinder Ford bus engine through four-speed transmission. Ready to operate weight is 7,100 lb. A 21-passenger transit model also is available.

★MODEL TC-46 seats 46 passengers. Weight is given as 18,000 lb. Has improved springs, axles, brakes, center point steering and separate compartment for auxiliary equipment. Model TC-48 seats 48 passengers and weighs 18,300 lb.



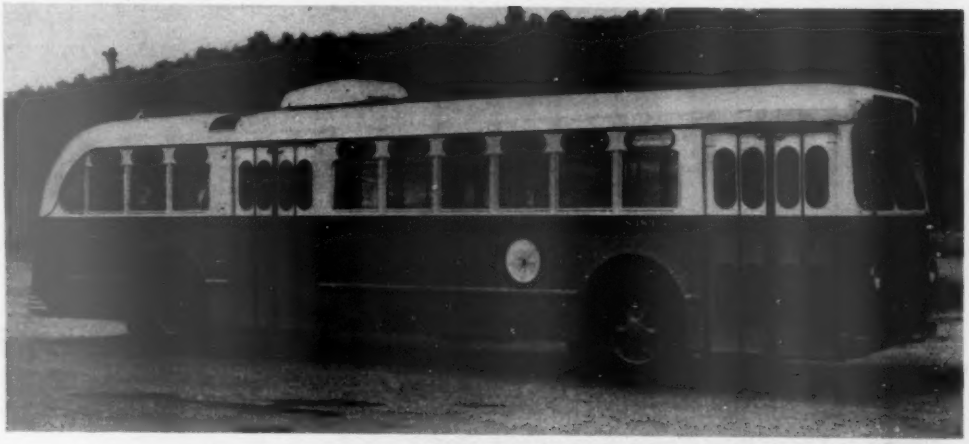
★WESTINGHOUSE newly developed Electrocam control installed on first of order of 50 Marmon-Herrington trolley coaches for Cleveland.

Marmon-Herrington

1951 BUS SHOW IN PRINT

BUS TRANSPORTATION

★MODEL TC-48, a 48 passenger trolley bus built for Cincinnati Street Railway Co. It has double-stream entrance and single stream exit doors. Model TC-49, 49 passenger coach also available.



Pullman-Standard

1951 BUS SHOW IN PRINT

BUS TRANSPORTATION

★44 PASSENGER trolley bus with rear exits on both right and left hand side built for Metropolitan Transit Authority, Boston. It has full modulated heat control. Overall length 40 ft., width 102 in.

★48-PASSENGER trolley bus with 268 in. wheelbase and measuring 39 ft. 10¼ in. long. It is one of a fleet of 80 built for the Department of Street Railways, City of Detroit.

★INTERIOR of 48-passenger trolley bus looking forward and showing arrangement of seats, wide aisle and adequate illumination.

St. Louis Car

1951 BUS SHOW IN PRINT

BUS TRANSPORTATION

★Equipment Section of Bus Show In Print continued on page 227.

THE TICKET WINDOW

A DEPARTMENT FOR THE TRAFFIC MAN

A Good Commission Agent Gets Better

IF GOOD COMMISSION agents are hard to find in the intercity business, as admittedly they are, then Ed Marth represents a kind of one-man jackpot to the two lines he serves. For Marth is not only a good commission agent, he is intent on getting better. What's more, he is succeeding: two years ago his monthly ticket sales totaled $641, now he has them up near the $3,000 mark. And he called the shot on it.

Marth sells tickets for Interstate Buses Corp. and Central Greyhound Lines from his Sweet Shop at 1 Main Street, Westfield, Mass. When he took over, in 1947, he only sold tickets for Interstate. But Marth personally persuaded Greyhound to come into Westfield and since 1948 he has sold more and more tickets for both.

This move to get Greyhound service was typical of Marth's approach to his task of commission agent. While selling bus tickets was a secondary line of endeavor with him, Marth reasoned correctly that the more bus tickets he sold, the more cigarettes, magazines, and sandwiches he'd also sell. And that is the way it has worked out because he makes selling tickets a real job, and quotes fares and schedules to anyone who will listen.

You may recognize the picture of Marth. We carried it in this department earlier this year when we cited Marth as a standout example of the aggressive commission agent (B.T., Feb., pages 63-64). When this picture was taken, Marth was doing well as a commission agent. So well he figured he would do better. His total bus ticket sales for August, 1949 were $641, a year later he had pushed this up to $1,206.

At this point, as his various merchandising moves began to register, Marth went out on a limb and flatly forecast he would make a mark of $2,600-a-month ticket sales volume. And he made it in less than a year. For the month of June, 1951, his sales hit $3,050. In July, indicating it was no fluke, the sales held up nicely at $2,800.

Marth's accomplishment is a notable one for him, of course, and also for the industry generally. For if a comparative newcomer to the field can drum up this kind of business, it indicates that the older hands among commission agents can be expected to show some progress. So, as we said some time ago, if your commission agents aren't producing as you think they should, tell them to borrow some of Ed Marth's ideas and give them an honest trial. The results may make everyone happy.

Boise Bus Company Launches Public Relations Campaign

There are many ways in which a company can attempt to improve its public relations. The Boise Bus Company, Boise, Idaho, has found that an institutional advertising campaign, which gives employees a pat on the back and points up the efficiency of the personnel, can do much in this direction.

There is, of course, nothing particularly new about this approach. It all depends on the way it is handled. And the company has handled its campaign with commendable restraint and simplicity.

A typical ad in the series is simply headed: "Roy Smith answers the phone." There is no picture, nothing garish or flashy. The copy just explains that Smith, who takes care of Boise Bus information, is a World War II veteran who was blinded in a plane crash. Without overdoing the theme, the ad also points out the service record of other company personnel, such as drivers and clerks. Then, briefly, it tells the history of the 25-year-old organization. Finally, the ad features the special rate offered Boise Bus customers, and even gets in some money-saving reasons for riding a bus.

This sounds as though one ad was trying to cover far too much ground and, in consequence, would dissipate much of its effect. In many cases this would be true. However, with its campaign, Boise Bus has carefully kept the copy under control and the whole thing is read quickly, easily and, apparently, with interest.

Company officials report that the ad resulted in more favorable comment than any other advertisement run by the company in the past 10 years. It indicates that thoughtful, sincere copy can accomplish more than elaborate and more expensive appeals.

Theater-TV Gaining Momentum

THE FIRST STIRRINGS of theater-TV, by which sports events are televised over a closed circuit for movie-house viewing, were noted last month in this department. And it was suggested that this trend would be a boon to movie-house business and might pack a significant riding potential as it made progress.

More progress is now being made for, in addition to the continuance of televising key fights for theater-TV, arrangements have been completed to televise a fairly impressive group of college football games in the same way. These games will be televised over a closed circuit on Saturday afternoons from Sept. 22 through Dec. 1. And the contests will be separate from the schedule available to the home viewing audience.

Movie houses in the East and Midwest will carry these clashes and, while the specific games have not been selected, colleges which have signed to participate include the United States Naval Academy, Princeton, Pittsburgh, Yale, Fordham, Columbia and Dartmouth. Several other schools, as yet unannounced, will also participate.

So far, reportedly, there are about 25 theaters equipped for big screen television and, by fall, many more are expected to be ready. By the end of the year it is estimated that around 100 will have this television equipment.

This theater-TV football schedule is a part of an experimental television project being conducted by the National Collegiate Athletic Association. Plan here is to find out video's effect on gridiron gate receipts. Regardless of what that effect may be, developments in this theater-TV football circuit are worth following.

GIVING THE OTHER FELLOW A BOOST In an effort to give the vacation business people a break, Provincial Transport Company, Montreal, recently took newspaper space in an appeal to "ease the holiday season squeeze." Pitched as a straightfoward public service message, with no selling approach, the ad pictured all the elements of the tourist trade caught in the Dominion Day-Labor Day vise, the traditional 90-day vacation period. Copy pointed out that not only are employers in the tourist industry pinched by this custom, but also workers in all transportation systems, restaurants, hotels, fuel supplies and other types of service. Provincial offered this solution: change the Labor Day holiday from the first Monday in September to the third Monday.

Good Will Through Glamor

TWIN CITY Rapid Transit Company went glamorous in the introduction of its brand new slate of officers to the public.

The company televised the colorful three-hour long annual Minneapolis Aquatennial Parade, had officers and directors sharing the spotlight with movie and TV stars, which included Faye Emerson and the Lone Ranger.

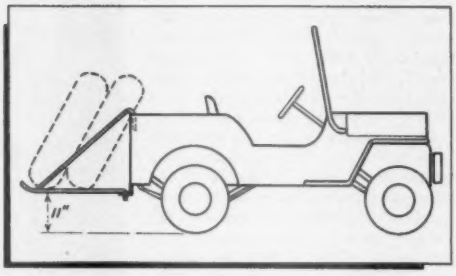
Those who were presented over TV included Emil Aslesen, new Twin City Lines president; Fred Ossanna, chairman of the board; Dr. David Elliason and James Barnes, vice presidents; James Towey, secretary-treasurer; Bernard Nelson and Elmer Olson, new board members; and Dan Brien, assistant to the president.

Television viewers in the area apparently liked the idea of meeting the men behind the management of Twin City Lines in this fashion. "We made a lot of friends by providing this televised parade, which was one of our first steps in the rebuilding of our public relations with our customers in this Minnesota area," said Board Chairman Ossanna, in expressing his approval of the affair.

4 Ideas for the Body Repair Department

Here are four practical ideas from the body repair department of Community Traction Co., Toledo, Ohio

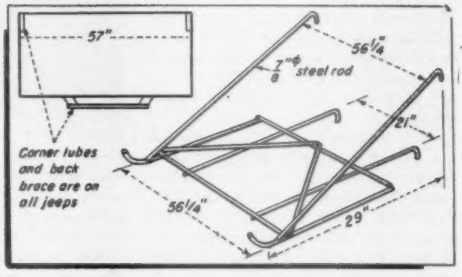
By R. W. Creswell
Foreman Body Department



1 Jeep Tire Rack

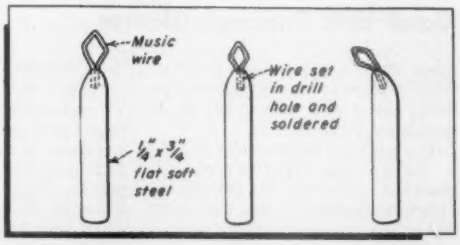
Two JEEPS are used on this property for service calls and also for pushing coaches. I have made a handy rack for this Jeep as shown in one of the drawings. It has proven very useful and is not costly to make.

It will carry two large size bus tires. Mechanics use this rack for carrying tool boxes when on service calls. It also is used for carrying radiators from one department to another and it has many other uses. It is made very simply and it merely lifts on or off—nothing to bolt.



2 Window Rubber Lacers

ANOTHER SKETCH shows three different shapes and size openings of a music wire lacer which will take care of all rubber set glass on General Motors Coaches. Such installation is used on windshields, upper ovals, door glass, rear and side glass and front destination glass. These glasses are set in a retainer rubber with a filler rubber used as a lacer. The devices are simple to make and inexpensive, but very practical.

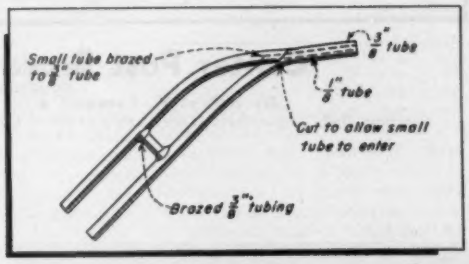


▶ Have you developed an idea that saves time or cash in your shop? If so, why not send it to "Howjadoits."

▶ For each item published we will pay $5, $10 and up. Send your idea in today to:

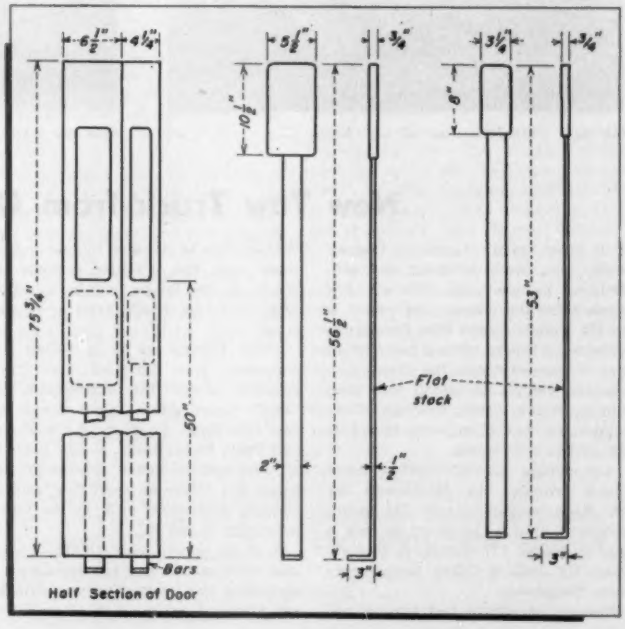
HOWJADOITS Editor
BUS TRANSPORTATION
330 West 42nd Street
New York 18, N. Y.

3 A Practical Torch



SHOWN HERE in one of the sketches is a good practical torch which can be used for radiator repairs such as recoring or removing top and bottom boxes. It can be used for battery work, body work, torch soldering and is much more practical and economical than acetylene torch as the spread is wider. It can be used with a long hose for thawing out frozen air tanks and lines on coaches. As fuel it uses artificial gas and compressed air. We use one of these torches with success in our radiator department.

4 Repair Tools

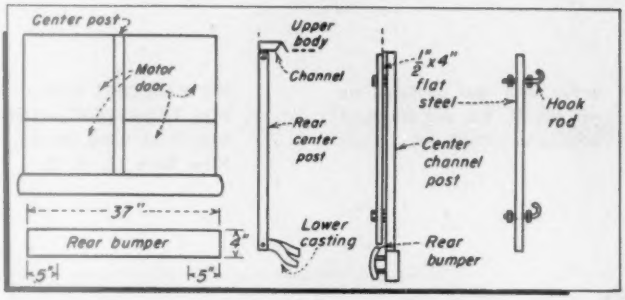


TWO BARS which can be used for a ram and a dolly block, and also for shrinking metal, when making repairs on GM Coach doors are shown in the sketch here. The front and rear entrance doors on these coaches are hollow and if damaged are tough doors to work on due to their construction.

These doors are easy to remove from coach and can be clamped on surface plate or bench. A small steel stamping is removed from the bottom of doors and then they are completely hollow up to the glass installation. The bars can be driven as a ram. Sometimes heat on certain sections of doors will be needed. For instance, if the door is smashed flat in places. The flat part of bar then can be used as a dolly block for hammering on and can be heated for shrinking metal. We find these tools very helpful and as a result we do not have to carry too many doors in stock.

Other make coaches such as Mack C41 Model also have hollow doors. Bars to fit their particular dimensions can be made very easily in any shop.

More HOWJADOITS on next page



Center Post Brace

By Robert W. Creswell •
Foreman Body Department, Community Traction Co., Toledo, Ohio

A CENTER POST rear engine compartment door brace or stiffener will prove valuable in preventing damage or distortion of motor coach bodies either when raising them by means of a chainfalls when changing rear springs or in event the rear end of the coach must be raised for tow-in if coach is damaged accidentally. The accompanying sketches show the construction details of such a device as developed in our shops for the GM coaches. This unit is installed on the outside of the coach and with a minimum of time and effort. To make the installation all that is necessary is to remove the two lower doors of the engine compartment. These can be detached easily and nothing else need be disturbed.

Tow truck created from an old bus chassis.

Rear view shows the hoist and axle cradle.

New Tow Truck from Old Bus

BLUE RIDGE LINES shopmen in Hagerstown, Md., have designed and constructed a new and efficient tow truck from the chassis and motor of an old Yellow Coach bus. Among the features of this truck is a hoist which may be placed under the frame of a disabled vehicle. A winch then goes into operation, lifting the end of the vehicle so that it may be towed to the garage for repairs.

The chassis of an 818 Yellow Coach which provides the framework for the truck, originally was 225 inches in length. It was cut down so that it now measures 177 inches. A six-cylinder 707 Yellow Coach engine provides the power.

The entire lifting and towing operation may be handled by one or two men, and the disabled vehicle is ready to be towed within minutes after the tow truck arrives at the scene.

"The Thing," as it is called by shopmen, was designed and constructed under the supervision of "Doc" Cunningham, shop foreman, and Jim Harp, foreman of the Body and Paint Department. It has 10.00 x 22 tires, special heavy springs in the front, tool boxes on each side, and a welding equipment rack in the rear. It weighs 18,230 lb.

A front winch with 7/16th-of-an-inch cable is provided for snubbing or anchoring the truck. The rear winch has stronger cable—⅝th-of-an-inch.

The original bus transmission was replaced with a heavy-duty truck-type transmission. This has a speed ratio ranging from a low of 5.25 to 1 to a high of 0.075 to 1 for the five speeds forward. The reverse speed has a ratio of 7 to 1.

Fitted with two gas tanks which hold 150 gallons, "The Thing" has the Yellow Coach's original steering gear and drive shaft. The shaft has been reinforced. The vehicle has air brakes and an air clutch. The cab was taken from a Dodge truck, cut in half, widened, and welded back together again.

It has proved to be so satisfactory that a similar unit is being built for the company's Construction Dept.

Los Angeles Transit Authority Set Up, Suspended Overhead Transportation Seen

● THE LOS ANGELES Metropolitan Transit Authority was created when Governor Earl Warren of California signed a bill establishing it recently.

At the same time he automatically gave support to a proposal to create a suspended overhead transportation system in Los Angeles county.

The legislation which breathed life into the authority gave it permission to construct, maintain and operate a mono or dual rail system in the San Fernando Valley, west of the west boundary of the City of Glendale and within four miles of the main channel of the Los Angeles River, from the valley to the mouth of the river, at Long Beach.

It is authorized to maintain and operate supplemental feeder bus lines in the event established carriers fail to provide this service after the California Public Utilities Commission has determined that such lines are necessary for public convenience and necessity.

And it is given the right of eminent domain, but cannot take over land of any other public corporation or privately-owned utility without the consent of the agency concerned.

The right to issue revenue bonds which would be exempt from state taxation is given the authority, but it will be required to pay an amount equivalent to taxes and assessments paid by public corporations within its boundaries.

LAMTA will be made up of seven members, to be appointed by the governor. They will serve for staggered four-year terms.

The bill provides for the appointment of the members of the authority within 60 days after the act becomes effective, on Sept. 22.

During legislative hearings on the authority bill, supporters declared that an overhead rapid transit system is the only way to solve the Los Angeles transportation problem.

A suspended system was advocated as supplemental to buses, street cars and private cars.

Stretching 41 miles from Van Nuys to Long Beach, through the City of Los Angeles, the system would have main depots every mile and a half.

An overhead system would cost only about one-tenth as much as a subway, the legislature was told.

Metropolitan Authority Changed In Wisconsin

While a transit authority was being created in California, Governor Kohler of Wisconsin signed a bill making some changes in the never-used Metropolitan Transit Authority Act of 1949, covering the City of Milwaukee.

Before an authority could be set up in the metropolitan Milwaukee area, referendums would have to be held in all the communities within the scope of its activities. If voters rejected the authority in any community, it would not be permitted to operate there.

Under the amended act, the income earned by the authority and the property it owned would both be exempt from state taxation. However, the authority would be required to pay the state certain sums in lieu of property taxes.

The amended act also includes a provision which would permit the authority to operate a freight and express business incidental to passenger service.

Another change provides that the governor shall appoint the seventh member of the board if the six other members, who would be appointed by the governor and the mayor of the City of Milwaukee, could not agree on the seventh.

In Milwaukee, meanwhile, there was agitation for a referendum in November. Mayor Zeidler was asked to call for a special election then—no other election is scheduled for November—and he promised to consider it.

An authority would take over operation of all transit facilities in the metropolitan area, including all bus and streetcar lines of the Milwaukee Electric Railway & Transport Co. and the now defunct Milwaukee Rapid Transit & Speedrail Co.

"A special election in November, without other issues, would give the public a better opportunity for complete understanding of the transit authority question," said the mayor, adding that the mass transportation problem in his city has been aggravated by "the apparent inability of the Transport Co. to meet the requirements of mass transit without pricing itself out of the market."

The Transport Co. recently told the city of its willingness to sell its 304 miles of routes and its 1,123 street cars, buses and trolley buses. The company last month was in the midst of arguments with the Wisconsin Public Service Commission in which it was asking for higher fares. It wanted to eliminate weekly passes and hike fares from seven tickets for 90 cents to seven for $1.

Table of Events

September

12-14—National Association of Motor Bus Operators annual convention, Chicago.

October

1- 4—American Transit Association annual convention, Cincinnati.

11-13—Michigan Motor Bus Association annual convention, Olds Hotel, Lansing.

29-31—SAE National Transport Meeting, Chicago.

Convention Pix

▶ *Watch for* BUS TRANSPORTATION'S *October issue—it will have more than 20 pages of pictures and text on the two big conventions, NAMBO in Chicago and ATA in Cincinnati early next month.*

Railroads Increase Fares East, West From Chicago

Here's good news for intercity carriers:

The railroads last month decided

to increase fares from Chicago to both eastern and western points.

The new fares, some of which went into effect Aug. 20, will, of course, increase the differential between rail and bus travel costs and may well increase patronage of buses.

Fares from Chicago to the east involved are round trip only, both coach and Pullman. They became effective last month. The rise in the west affects one-way coach rates between the west coast and midwestern points and won't be effective until the first of next month.

The change in round-trip fares from Chicago to the east will be on a sliding scale, rising as travel distances increase.

Heretofore, round-trip discounts for coach travel have ranges to a maximum of 24 per cent of an amount double the one-way fare. This, said railroad spokesmen, was cut to a maximum of 15 per cent. For Pullman travel, the maximum round-trip discount was 10 per cent, and came down to a maximum of five per cent.

For example, the round trip Pullman fare between New York and Chicago before Aug. 20 was $84.64, including federal tax. That was double the one way fare ($47.02) less 10 per cent. Now the fare for the same ride is $89.34.

Bus fares for travel between the same cities is $20.64 one way, $31.74 for a round trip ticket used within three months, and $37.20 for a round trip used in six months.

Thus the difference between the two modes of travel—increased by $4.70—is now $57.60.

PACIFIC GREYHOUND LINES recently held opening ceremonies for its new modern $750,000 terminal at Reno, Nevada. The 28,000 square-foot building houses waiting and baggage rooms, offices, restaurant, drivers' dormitory and—since it's in Reno—a slot machine arcade. A covered concourse has space for loading nine buses at once.

The change in rail fares between Chicago and the west coast will increase one-way coach rates to 2.5 cents a mile from the present 2.2 cents.

Neither change required a hearing before the Interstate Commerce Commission.

Transit Celebration Starts With Lunch

Celebration of transit's centennial —Transit Progress Day itself comes on the 24th of this month—was kicked off in the New York area on Aug. 30 when Mayor Vincent Impellitteri of New York City was guest of honor and Col. Sidney H. Bingham was principal speaker at a luncheon at the Waldorf-Astoria in New York.

John E. McCarthy, president of the Fifth Avenue Coach Co., was chairman in charge of the committee for the luncheon.

Col. Bingham reviewed the history of transit since 1851, and told of some

Continued on page 249

St. Louis PS Wants Zone Fare System

Zone fares will come to St. Louis if the St. Louis Public Service Co. has its way.

That's what John C. Baine, executive vice president of the company, told the Metropolitan Mass Transportation Commission, which was recently established to "determine what steps must be taken to provide more adequate streetcar and bus service."

He said that the request for zones will come when the company asks for its next fare increase. "Probably" zone fares are the solution to the company's problems, Baine said, noting that in its last two requests to the Missouri Public Service Commission St. Louis PS had asked for zones, but had been turned down both times by the commissioners.

In discussing with the commissioners and Mayor Joseph M. Darst ways the company could provide better service to St. Louisians, Baine suggested staggered hours for workers in plants and offices; relief from taxation for the company; and elimination of duplication of service on routes served by both St. Louis PS and the St. Louis County Transit Co.

Mayor Favors City Control

Earlier, Mayor Darst had said that he favors city control of routes and service of PS buses and streetcars as one way of getting improved service, but that he thinks matters concerning fares should remain in the hands of the Public Service Commission. Control over buses had been held by the City of St. Louis until three years ago, when the Missouri Legislature gave it to the PSC.

Meanwhile, in an effort to offset unfavorable publicity in the columns of the influential St. Louis *Post-Dispatch*, the Public Service Co. issued a booklet intended to refute charges that it is making too high a rate of profit, that its fares are out of line and that its service is inadequate.

In the 17-page pamphlet it said that "(The company) is on record as wishing to do everything within its power and within reasonable limitations to achieve its stated objective . . . which is to provide the best possible transit service at the lowest possible cost. It will continue to operate its bus and streetcar facilities with this objective in mind."

The pamphlet, addressed "To the citizens of Greater St. Louis," took

up profits, fares and service. It said that profits are not too high, that fares compare favorably with those found in other cities in the U. S., and that service is not so bad as the *Post-Dispatch* paints it.

Postscript: Worcester Accidents Off Further

Worcester Street Railway Co. accidents keep right on going down. (See "The Worcester Way to Safety," June B.T., page 41.)

The total of all reports for the six month period ending June 30 showed 30 per cent fewer accidents this year than last—490 compared to 689.

Traffic accidents per 100,000 miles were down 25.86 per cent, and chargeable traffic accidents per 100,000 miles were off by 28.97 per cent, reports Safety Director William M. Corrigan.

Passenger accidents per million riders, he adds, were down 36.27 per cent this year from last, and chargeable accidents in the same category were off an impressive 48.89 per cent.

And all this despite the fact that the system is now competing against figures which were already well down from those of 1949.

Anybody else in the business got any figures like these to boast about? If you have, BUS TRANSPORTATION will be glad to print them.

DSR Deficit Highest In System's History

The Detroit Department of Street Railways hung up a record-smashing $2,736,365.88 deficit for the fiscal year ending June 30. It surpassed even the depression-year 1930-31 loss of $2,501,142.

Strangely enough, the strike that took 59 days' revenue away from the DSR did some good in the balance sheet. It saved some $396,000 in depreciation on the rolling stock.

Auditor General Benjamin J. Tobin noted that in only one of the last six years—1947—has the DSR shown a profit. That, he said, was due to a fare rise then. He added that fare increases in 1948 and again in 1950 did not get the system into the black. He gave as reasons for the big loss in the year 1950-51 reduced patronage and increased costs.

Four members of the Detroit Common Council were in favor of another fare hike for the DSR, and four were against. The four who wanted the boost thought that elimination of the seven-tickets-for-$1 deal would help. Fares would then be 15 cents straight.

General Manager Leo J. Nowicki, at a meeting with the council, said that had it not been for the crippling strike, DSR losses last year would have come to only about $600,000.

The Michigan State Mediation Board, meanwhile, was unable to settle for once and for all the wage dispute between members of the Amalgamated and the DSR. The union sticks to its demand for fringe benefit adjustments and a basic pay raise that would cost, observers say, about 38 cents an hour. The DSR offers what the union claims amounts to a 44-cent hourly cut.

New demands by the union include a five-day week, with time and a half for the sixth day and double time for the seventh, plus an increase in report and turn in time from 30 to 40 minutes a day.

WASHINGTON REPORT

Wages can go up in direct ratio to rises in the cost of living, said a recent resolution passed by the Wage Stabilization Board. There's no intent to crack the 10 per cent line, the board said, just "to provide other measures that can be taken if the 10 per cent formula does not fill a particular need."

The resolution still had to be okayed by Economic Stabilizer Eric Johnston. For your information: Johnston said last month that he expects to see the cost of living to balloon by another five to eight per cent. It's likely, therefore, that carriers who've signed wage contracts containing escalator clauses will have to prepare to give five to eight per cent raises, and soon.

WSB's resolution does three things: 1) it allows escalator clauses signed before the freeze date—Jan. 26, 1951—to continue indefinitely, 2) it allows those who want to write escalator clauses into labor contracts now to do so, providing that they limit raises to jumps in the cost of living and 3) it allows those who don't want escalator clauses to re-open wage contracts periodically, in order to take care of increases in the C. of L.

• • •

WSB has appointed a six-member committee to work with the board on health, welfare and pension control. Johnston is on record as favoring exclusion of such payments from the 10 per cent wage increase limit.

• • •

National Production Authority came out with Construction Order M-4A, superseding M-4. Briefly, it barred start of most new construction between August and Oct. 1, unless the builder had his steel, copper and aluminum on hand, or the amount involved was slight. At the same time, NPA Administrator Manly Fleischmann denied that more of those materials had been allocated under CMP than were available.

• • •

Only six widely-separated labor markets in the country have labor shortages that amount to anything, the U. S. Labor Department reports. But — Defense Secretary George C. Marshall figures the services need a half-million new men within the next 10 months just to replace enlisted reserves and men whose enlistmnets expire. That doesn't take into account any expansion beyond the present 3.5 million ceiling. So expect to lose some employees to the draft, some others to reserve call-up.

• • •

Government price order (CPR-62) effective last month determined the maximum price for private brand tires and tubes by adding to the manufacturers' cost the percentage mark-up which he had on sales to a particular buyer during a 90-day accounting period between Jan. 1 and June 30, 1950.

• • •

Price ceilings on lubricants and greases were in the making last month, may already have been issued by the time you read this.

TCRT, DSR Announce Conversion to Buses

Twin City Rapid Transit Co., in Minneapolis and St. Paul, will—over a five year period—take streetcars off their runs and replace them with "fast, 50-seat buses," said Board Chairman Fred A. Ossanna last month.

At the end of last year the company had 776 streetcars running on 440 miles of track.

Ossanna, in New York to study the transit system there, said that Twin City had to have a "complete change-over" because of the "terrific impact of the automobile."

Detroit, too, had plans to modernize. "As soon as possible," said the DSR, it would eliminate the last three

lines on which the old Peter Witt streetcars were in use. Three other streetcar lines were to remain, but they were served by PCC cars, 186 of which are of postwar construction. Still another three trolley lines were discontinued when Detroit's 59-day strike ended on June 19.

All Six N.E. States Have 40-foot Bus Law

When Massachusetts swung into line last month, carriers in all six New England states were authorized to use 40-foot buses.

The New England Bus Association said that it was a "tremendous uphill battle" to get Governor Paul Dever to sign the bill permitting the long vehicles on Massachusetts highways, and that similar legislation was passed in New Hampshire shortly after the governor did sign.

Cable Car Line Is Up For Sale

Directors of the California Street Cable Railroad Co.—San Francisco's cable car line—have decided to sell out to the highest bidder.

Louis J. Glicksberg, counsel for the receivers of the company, said that, "We are assuming the city is going to buy it."

The cable car company went into Federal Bankruptcy Court with the intention, originally, of seeking reorganization. San Francisco voters six years ago authorized purchase of the line for a sum not to exceed $150,000, but the deal was never worked out.

Correction • *The report of seven slander suits filed against Carolina Coach Co., Raleigh, N. C. (Aug. B. T., page 66C), erroneously said the suits evolved from contract talks between the company and the Amalgamated. Carolina Coach says the union had no part in the suits. They were instituted by drivers who had been dismissed by the company.*

Greyhound Profits Up; $4.6 million in 1st Half

Business was better for the Greyhound Corp. during the first six months of this year. The corporation made 43 cents a share on 10,600,367 common shares outstanding from January to June of 1951.

For the six months ended June 30, the corporation showed consolidated net income after preferred dividends of $4,663,123, after all charges and taxes. It compared with a net of $3,864,815 for the first six months of last year, which was equivalent after preferred dividends to 40 cents a share on the 9,330,090 shares outstanding then.

The increase in the number of common shares is due to the acquisition of Southeastern Greyhound Lines as of Dec. 31, 1950. For comparative purposes, net income for the 1950 period computed on the basis of 1951 federal income tax rates, would have been 33 cents a common share.

Operating revenues for the six months amounted to $100,677,258, compared with $82,155,684 for the same months of last year, an increase of $18,521,754, or 22 per cent. Of this increase, Southeastern contributed $9,846,065.

Michigan Association To Meet Next Month

The Michigan Motor Bus Association expects about 100 people to attend the annual convention at the Olds Hotel, Lansing, Oct. 11-13.

UER Gets Fare Hike, Keeps Basic 10 Cents

Public Utilities Administrator Thomas A. Kennelly, of Rhode Island, has authorized the United Electric Railways Co. to discontinue the unlimited-ride weekly pass and substitute a punch card good for limited use at increased prices.

It was a temporary decision, made to relieve a critical financial situation. Meanwhile, further inquiry into the company's long-range problems was to begin this month.

Permission was also granted to UER to increase the price of transfers from two to five cents. The request for a rise from the present 10-cent basic fares was denied.

The new punch card system abolished the previous $1.25 single-zone unlimited pass, and replaced it with a $1.50 weekly pass good either in the Providence, Pawtucket, Woonsocket or Arctic one-zone areas, with no other privileges. The new pass is restricted to 24 rides. Two-, three- and four-zone passes were also abolished.

The decision recognized that punch cards may slow service.

The administrator said that the temporary order will have the least impact on the riding public, until a full-scale hearing can be held. The company testified that it is in default in bond interest, and that it is in the red by $109,956 after meeting bond payment provisions June 30.

Fare Briefs

As foreseen last month (Aug.B.T., page 60), Chicago Motor Coach Co., has asked for a fare increase, which if granted will be its second in the company's 28 years of operation.

Chicago Motor Coach's request came on the heels of an increase for Chicago Transit Authority. The coach company asked that rates be hiked from the present 13-cent level to 15 cents. It also wanted the five-cent shuttle bus fare raised to a dime.

A pending wage boost for its 1,100 employees was cited by Chicago Motor Coach as a major factor in its need for higher fares. Higher wages will cost the company about $400,000 a year, it is estimated.

* * *

Birmingham Transit Co. has asked for a fare increase from its present basic 10 cents to 15 cents.

In addition, the company wants to inaugurate a two-cent charge for transfers, now issued free.

* * *

Pittsburgh Railways Co. — whose present basic fare is 15 cents cash, with four tokens for 55 cents and with a 20-cent charge for express bus service—is getting ready to file for a higher fare. Reason: an arbitration board last month granted 3,200 company employees a seven-cents-an-hour wage increase retroactive to May 1, and an additional three-cent hourly boost effective next Jan. 1. The board's decision was unusual in that it ordered an escalator clause providing for higher wages in the event the cost of living index goes up, but added that in no case may wages be cut.

* * *

Capital Transit Co. has requested the District of Columbia Public Utilities Commission to let it charge a higher fare. CTC wants to retain its current 15-cent fare, but to drop the three-for-40 cents tokens. Further, the $2 weekly pass would go to $2.25.

SHORT HAULS

Wide World Photo

IT'S BEEN A LONG HAUL in the bus industry for Andrew G. (Bus Andy) Anderson. Andy, a pioneer in the motor bus business, recently got out the early White bus he used to drive himself, just to see how it felt. One of the moving forces in the development of the bus industry, he is now president and general manager of the Mesaba Transportation Co., Hibbing, Minn.; in partnership with two others in the ownership of the Winona Transit Co., Winona, Minn.; president of the Eau Claire Transportation Co., Eau Claire, Wis.; and vice president of La Crosse Transit Co., La Crosse, Wis.

Burglars who broke into the offices of the **Boardman Transit Co.** in Youngstown, Ohio, can get plenty of free rides between the city and suburban Boardman. Part of their loot consisted of 100 pounds of unused tokens, which fooled the robbers because they were wrapped like coins.

Houston Transit Co. has spent $20,000 for new route signs for all 600 of its buses. They have names of all the recently-created routes and the block number and street at which the buses will start their return trips.

New wrinkle on preventing traffic jams: **Cleveland Transit System** recently put into effect an order suspending speedy drivers one day for each minute they're ahead of schedule. Even by running 30 seconds ahead of time, CTS said, drivers cause jams and overloading.

Headline in a recent issue of **Virginia Transit Company's Transit Topics**, the company's promotional leaflet: "Don't Cuss, Ride The Bus."

A **Northland Greyhound Lines** depot on the new route from Minneapolis-St. Paul through Dubuque to St. Louis is the Hotel Boscobel, in Boscobel, Wis. The hotel's other claim to fame: in 1898 it was the first meeting place of the Gideons, the group which still places Gideon Bibles in U. S. hotel rooms.

As foreseen in BUS TRANSPORTATION (June, page 86), **Cleveland Transit System** got an additional $7.5 million from the Reconstruction Finance Corp., bringing its total loan to $29.5 million. The money is being used on a modernization program.

A Glendale, Calif., pedestrian got so angry—he was really mad—at a **Pacific Electric** bus driver when the vehicle stopped in a pedestrian crosswalk that he wound up and hit the bus as hard as he could with his fist. Broke the windshield.

American motorists will hand over to state governments a record $3 billion in highway use taxes this year, the Tax Economic Bulletin of the **American Petroleum Industries Committee** predicts. That's three times as much as they paid in 1945.

The **Paris Metro** (subway) is conducting tests in which rubber tired, non-rail cars are substituted for conventional subway cars. Test trains are running on a concrete-lined channel, eliminating costs involved in rail maintenance, and cutting down on noise.

Ninety-two **Great Lakes Greyhound** drivers ended a brief strike recently because, they said, they felt sorry for bus riders in the Ohio area served.

"We're going back by bus—once was enough," said three boy scouts who floated down the Mississippi on a raft from Minneapolis to St. Louis to see a major league ball game recently. And the Cardinals lost the game, too.

General Manager John Cluff of the **Columbus-Celina Coach Co.** in Ohio, recently faced with a strike of his drivers, did the only constructive thing he could do—he got on one of the buses and drove it himself.

Portsmouth Transit Co., a subsidiary of Virginia Transit Co., has accepted delivery of 15 GM coaches which cost a total of $140,700, and which bring the Portsmouth fleet to 90 buses and the combined Virginia-Portsmouth fleet to 556 buses.

Memphis and Los Angeles became terminals of a 1982-mile through bus service when the **Trailways** organization inaugurated the "King Cotton Route" recently. That's no Short Haul.

Wichita City Lines and the City of Wichita, Texas, got into an awful hassle recently over whether or not the bus company would change its route to suit the City Council. When the company refused, police were instructed to write traffic tickets for every bus driver who stopped at one of the usual downtown bus stops. Cops and drivers all said, "I'm just doing my job."

A stretch of highway in southwestern Idaho will be used to make the same sort of highway axle-weight tests as the ones made over the now famous Maryland test strip. The site was okayed by the **Western Association of Highway Officials.**

Continued on next page

PERSONALS

GEORGE T. BRANNAN has been appointed publicity manager for Pennsylvania and Capitol Greyhound Lines.

A native New Yorker and a Greyhound employee since 1931, George Brannan originally was a ticket agent at Penn Terminal in New York. Later he was promoted to passenger agent, and in 1935 he became terminal manager at the Capitol Bus Terminal in New York. Since 1946, and until the present appointment, he had been general passenger agent in New York.

The new publicity manager's duties will include contact with the working press, radio and television as well as the preparation of news releases, and supervision of the employee publication.

MILTON CLEMONS and **Robert Reichert** have purchased the Beardstown (Ill.) Transit Co.

R. E. FOILES has been appointed manager of the Valley Transit Co., Harlingen, Texas.

W. ARCH GAYLOR is new vice president and director of purchases for Memphis Street Railway Co. He was formerly purchasing agent and superintendent of stores, a post he had held since 1939.

In other major personnel changes, Col. Roane Waring, president of the MSR, said that **Edward P. McCallum, Jr.**, former director of research, is now assistant general manager;

John T. Menietto, former foreman of the bus garage, is now superintendent of equipment;

J. J. Vaughan is retiring as master mechanic after 44 years of service with the company;

Carlos B. Tutwiler and **Tom H. Palmertree**, formerly general foreman and garage foreman, respectively, have been named assistant superintendents of equipment.

L. S. GOSNELL is new superintendent of maintenance at Carolina Scenic Stages, Spartanburg, S. C. He was formerly in charge of personnel. During his 17 years of service with the company Mr. Gosnell has devoted most of his time in the mechanical department. **Ben Johnson** is now parts manager.

WINFORD E. GRIFFIS has been named comptroller and assistant secretary of Birmingham, Ala., Transit Co.

CARL HAHN and **Walter Phillip** have sold the Intervalley Motor Coach Lines to **L. T. Nord**, a former owner of the lines. They had purchased the lines from **Mrs. Page Francis** last September.

The company operates bus lines from Yakima to surrounding valley communities.

F. H. HOLISKY, who has supervised the Mound division of Northland Greyhound Lines since 1944, has been appointed to the newly-created position of superintendent of equipment.

WILLIAM KALLSCHMIDT has been elected assistant treasurer of the Cincinnati Street Railway Co. by the board of directors.

Mr. Kallschmidt has served in the company's cashier department since 1923. For many years he had charge of farebox repairs.

HAROLD McBRIDE, safety supervisor for Great Lakes Greyhound Lines in Detroit, is on a six-month leave of absence due to ill health.

Francis Hitchcock has been assigned to Mr. McBride's duties temporarily.

GENE E. HOLMES of San Francisco has announced the purchase of Rocky Mountain Motor Co., Denver. Included in the sale were the Colorado company's widespread sightseeing franchises, hotel and garage holdings.

Mr. Holmes, a well-known travel man, is president and general manager of the Gray Line, Inc., in San Francisco. He and his associates paid

Gene E. Holmes

"in the neighborhood of one and a half million dollars," he said, to **Roe Emery**, Rocky Mountain's founder and president. Mr. Emery, who pioneered the territory and built facilities which helped make Rocky Mountain National Park one of the nation's leading tourist attractions, will remain with the company as chairman of the board of directors.

Purchase, according to Mr. Holmes, includes complete ownership of the Gray Line of Denver; sightseeing rights at Rocky Mountain National Park and Pike's Peak; two Colorado hotels, the Chalet-Ranch in Estes Park, and the Grand Lake Lodge at Grand Lake, as well as two intercity bus lines.

Extensive modernization is planned for the Rocky Mountain National Park operation, Mr. Holmes said, but no immediate change in personnel is contemplated. **A. K. Holmes**, a longtime executive with Rocky Mountain, will continue to hold his present position as Vice-President.

DARREL S. PECK has peen named manager of Spokane City Lines, replacing **A. R. Thompson**, who has resigned.

Mr. Peck was formerly manager of another Pacific City Lines operation, the Sacramento City Lines, in Sacramento, Calif. He has been with the organization for nearly 13 years, formerly acting as assistant manager of Salt Lake City Lines.

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A RECORD NUMBER—more than 400—members and guests of the New Jersey Motor Bus Association turned out recently for the 16th annual outing at Blasberg's Grove. President Benjamin Casser and General Counsel George Eichler made brief speeches to the group.

NEWS FROM THE MANUFACTURERS

ACF-BRILL MOTORS CO. has announced a net profit of $1,060,000 for the first six months of 1951, as compared with a loss of $107,324 for the corresponding period of 1950. This is the equivalent of $1.11 per share of common stock now outstanding.

Net sales for the first half of 1951 amounted to $10,300,000 as against sales of $6,482,491 for the same period of the preceding year, a gain of 59 per cent.

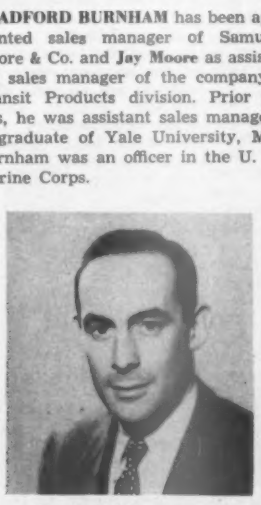
A backlog of $23,602,000 as of July 1 was announced by Charles W. Perelle, president of the company.

Increased sales, said Mr. Perelle, stemmed mainly from a growing volume of defense production including specially designed buses, mobile power units for starting jet engines; transmissions for helicopters, a proto type model of a new amphibious truck, and various service parts for the armed forces.

AUTOMOBILE MANUFACTURERS ASSOCIATION says that U. S. factory sales of motor vehicles totaled 3,889,851 units in the first six months of this year.

The total represents a slight increase over the 3,750,316 units produced in the first six months of 1950. Included are cars, trucks, and buses for U. S. military services.

BRADFORD BURNHAM has been appointed sales manager of Samuel Moore & Co. and **Jay Moore** as assistant sales manager of the company's Transit Products division. Prior to this, he was assistant sales manager. A graduate of Yale University, Mr. Burnham was an officer in the U. S. Marine Corps.



Bradford Burnham

Jay Moore

Mr. Moore spent two years in the main plant before becoming southeastern sales representative. He has been stationed at the Mantua sales headquarters for the past nine months. Mr. Moore is a graduate of Kent State University and served with the U. S. Navy.

H. E. HUMPHREYS, JR., president of United States Rubber Co., has been elected chairman of the board of directors. He will continue as president.

Mr. Humphreys succeeds **Herbert E. Smith,** chairman and former president, who retired Aug. 31 after 38 years of service. Mr. Smith will continue as a director and member of the finance committee.

The board also elected **John W. McGovern,** vice president and general manager of the Tire division. a member of the executive committee. **Howard N. Hawkes,** assistant general manager of the Tire division, was elected a vice president and appointed by Mr. Humphreys as general manager of the Tire division to succeed Mr. McGovern.

M. W. KELLOGG CO. has appointed two new vice presidents, one to head up sales and the other to take charge of the company's manufacturing facilities.

They are **Russell J. Wolf,** formerly assistant to the president of the firm, and **Donald W. Champlin,** former general manager of the Equipment Manufacturing division of Continental Can Co.

MACK TRUCKS, INC., and subsidiary companies report net sales of $81,045,509 for the six months' period ended June 30, 1951 and a net profit of $1,920,408, after provision for federal and Canadian income taxes at currently existing rates. This profit represents $1.28 per share on 1,494,668 shares of outstanding common capital stock.

Sales for the first half of 1950 aggregated $53,638,935 and net profit amounted to $64,402 or $.04 per share, after provision for federal and Canadian income taxes.

ARTHUR B. OLIAN and **Robert Sidman** have established the Olian-Sidman Advertising Agency, Inc. and Pennsylvania Public Relations Service.

The agency was formerly known as Olian Advertising Agency, Inc.

Offices are at the corner of Front and Harris Streets, in Harrisburg.

PERFECT CIRCLE CORP. has elected **W. B. Prosser** to a vice presidency. He has been general manager of the firm since 1947.

Mr. Prosser joined the organization in 1925 as a salesman for the General Piston Ring Co. In 1928 that company was joined with Perfect Circle and became the firm's Tipton plant. In 1930 Mr. Prosser was named Tipton plant manager. Later he became a sales manager for the firm. In 1943 he was named general factory manager and held that position until he became general manager.

In addition to his new position, Mr. Prosser is also chairman of the board of directors of Perfect Circle Co., Ltd., Perfect Circle's Canadian subsidiary.

ROBERT E. HUTHSTEINER has been elected president of Cummins Engine Co. by the board of directors.

Formerly executive vice president, Mr. Huthsteiner succeeds **J. Irwin Miller,** who becomes chairman of the board. **Clessie L. Cummins,** founder of the 33-year-old company and formerly chairman of the board, was

Continued on next page

Robert E. Huthsteiner

named honorary board chairman.

Mr. Huthsteiner is the third president of the company, which builds lightweight, highspeed, four-cycle diesel engines.

He has been associated with the company for almost 10 years, having come to Columbus from Chicago in March 1942 to be sales manager. He was named controller in 1944 and elected a vice president in 1946. He was elected a director for the first time in 1947 and also served successively as treasurer, general manager, and executive vice president.

ARNOLD W. LARSON has been named vice president in charge of sales for the Tobin-Arp Manufacturing Co., of Minneapolis.

Mr. Larson has been associated with the automotive service industry

Arnold W. Larson

since 1918 and has been with Tobin-Arp since 1935, with the exception of three and a half war years.

He took charge of Tobin-Arp's sales organization two years ago this month.

Jack M. Taylor was named secretary of the company. He has been with the company since 1949 and had been comptroller previously.

UNITED STATES RUBBER CO. net earnings for the first six months of 1951, after all charges, were $16,427,-189, compared with $8,848,757, or an increase of 86 per cent over the corresponding period of 1950, according to the midyear report to stockholders.

This is equivalent to $7.85 a share on the common stock, compared with $3.55 in 1950 after providing for preferred dividends.

Net sales for the half were $427,-714,511, compared with $291,278,706, or an increase of 47 per cent over the corresponding period of last year. Earnings were 3.8 per cent of sales compared with 3 per cent last year.

Sales and earnings for the first six months were the highest in the company's history.

LINCOLN ENGINEERING CO., St. Louis, manufacturers of lubrication equipment, has announced the appointment of **John E. Renner** to the position of general sales manager.

Mr. Renner, associated with the firm for 15 years, has successively

John E. Renner

held positions of sales representative, automotive merchandise manager, and sales manager of the Automotive division. He will direct sales of the company's Automotive, Agricultural and Industrial divisions.

TWIN COACH CO. reported a net profit of $486,730 for its first six months of 1951.

This is equivalent to 89 cents per common share after provision of $64,-000 for preferred dividends.

In the same 1950 period, the company showed a profit of $227,000 before taxes and a net profit of $139,-206.

1951 first-half profit before taxes was $1,270,000. After provision of $783,270 for maximum tax rates at 62 per cent the net totaled $486,730.

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FINANCIAL

AKRON TRANSPORTATION CO. reported a profit of $19,-016 in June, over $9,000 more than for the same month in 1950, when the present 12-cent fare was not in effect. The company reported gross revenue for June of 1951 of $327,360, compared to $281,-210 in June last year. The system carried 4.47 paying passengers for each of the 606,670 miles it operated during June, well below the number of passengers a mile the franchise provides, said William H. Muldoon, vice president of the ATC.

BALTIMORE TRANSIT CO. reported a net income of $27,365 for the first half of 1951 after provision for debenture interest.

This showing was in contrast to a deficit of $801,389 for six months of 1950.

Net income for June, on the same basis, was $29,342 as against a net income of $73,108 for May and a deficit of $83,203 for June a year ago.

During the first half of 1951 the company reported deficits for the first two months and operated in the black in each of the ensuing four months.

Gross operating revenues for the six months of the current year totaled $12,242,-213, rising $859,205 or 7.55 per cent over similar period of 1950. Gross for June was $1,997,193 against $1,898,489 a year earlier.

Revenue passengers using the streetcars and buses totaled 90,062,403 in the first half of 1951. This was a decline of 11,933,691 compared with six months of 1950.

CAPITAL TRANSIT CO. reported for the six months ending June 30 net income of $960,129, after charges and taxes, a healthy gain from the $207,916 of 1950.

The company earned $4 a share, compared to $.87 in the first six months of 1950.

CHICAGO TRANSIT AUTHORITY revenues of $9,-084,384 for the month of June, 1951, were down $545,-923 from June, 1950, but were still adequate to cover all charges and to provide $160,245 to reduce to $888,-239 the deficiency in depreciation reserve deposits which arose during the early part of 1951.

The results for June 1951 were made possible by a reduction of $566,610 in operation and maintenance expenses, from $8,440,710 for June 1950 to $7,874,100 for June, 1951. This reduction in expenses, which more than offset the reduction in revenues, resulted primarily from the use of new equipment being delivered.

CINCINNATI STREET RAILWAY CO. operations during June were almost identical with those of June, 1950.

Morris Edwards, president, reported that gross receipts of the company were sufficient to pay all costs of operation, interest, sinking fund requirements, taxes and allow $3,487 return on capital. In June, 1950, there was a return of $3,457 on capital.

The deficit in the fare-control fund mounted to $1,-939,111, compared with $1,-338,827 at this time last year. In June the company carried 7,482,442 revenue passengers, against 7,881,972 during June, 1950.

HOUSTON TRANSIT CO. gross receipts for the six months ending June 30 were $4,918,221, an increase of $663,221 over the same period of 1950.

The rise in receipts is attributed chiefly to the increase to a straight 15 cents

in the fare which went into effect last December. The basic fare prior to that time was 10 cents.

The transit company paid $74,921 as its gross receipts tax for the second quarter of the year, $2,298 more than the $72,623 it paid for the first three months of 1951. The company pays a 3 per cent gross receipts tax to the city.

MILWAUKEE ELECTRIC RAILWAY & TRANSPORT CO. says that June riding slipped nine per cent from the June, 1950 figure. It stood at 24,886,935, compared to 27,240,889 a year ago.

For the first half of the year, the passengers-carried column of the company's books showed 168,880,067 compared to 174,085,784 in the first half of last year.

LOS ANGELES TRANSIT LINES net income for the six months ended June 30 amounted to $297,585, equal to 27 cents a share on the 1,095,440 shares of common stock outstanding, as compared with $252,322, or 23 cents a share, in the like period of 1950.

Operating income for the period aggregated $11,260,-133, as compared with $11,-069,906 in the first half of last year.

SAN ANTONIO TRANSIT CO. net profits for the fiscal year ending June 30 came to $75,-950.

On an investment of $5,-419,580, that amounts to a return of 1.44 per cent.

Earnings for the 12-month period were $5,229,000, and expenses were $5,153,580.

The company is seeking the elimination of tokens, a straight 10-cent fare, which would give it a return on investment of about 4.87 per cent.

SANTA CRUZ (CALIF.) TRANSIT CO. has been granted a 50 per cent fare boost by the state's Public Utilities Commission. In granting permission the PUC pointed out that under old rates, the company stood to lose $19,310 a year. New rates will yield an estimated net profit of $4,740.

THIRD AVENUE TRANSIT CORP., operating in bankruptcy, continued to show better financial results during the month of May.

The trustees' report on operations of the New York City bus system showed a net loss for May of this year of $210,000, about $166,500 less than the loss of $376,650 sustained in the same month of 1950.

Operating revenues rose by more than $300,000 to reach $2,557,240, compared with $2,201,248 in May, 1950.

The company has shown a reduction in its deficit in each of the first five months of the year.

TORONTO TRANSPORTATION COMMISSION reports 1950's financial results "not as satisfactory as recent years."

The system showed a loss of $1,312,058, compared to a net profit of $124,811 in the previous year.

Gross revenue was $26,-432,911, some $25,439 less than in 1949. The decline was not serious, the commissioners reported, because 1949 was the system's best year ever. But at the same time costs of running the service were $1,350,000 more than in 1949.

The number of revenue passengers carried last year on the street cars and buses of the city system was 310,-424,735, a decrease of 3,339,-367 from the number carried in 1949.

VIRGINIA TRANSIT CO. has paid to the City of Richmond the first big revenue check of the new fiscal year—$108,-539.80 — covering its franchise tax for the first six months of 1951.

The amount represents five per cent of the total revenue of the company during the period. Total revenue was $2,170,796.08.

WINNIPEG ELECTRIC CO. transit system is being operated at a deficit which may run to as much as $870,000 for the year 1951.

TERMINALS AND SHOPS

Openings

Havana, Cuba — Havana's new bus terminal on the Rancho Boyeres (airport) highway, 20 minutes out of town, is doing a land office business.

An estimated 1,800 buses and 24,000 passengers are using the terminal daily.

Second in size only to New York's Port Authority terminal, Havana's was built by Engineer Perez Benitoa at a cost of $3.7 million. Among the installations are a hotel, bank, bar, private bar, an air-conditioned cafeteria, a gasoline station, and a general car equipment shop.

A luxurious waiting room runs the length of the terminal and is fitted with modern chairs and couches (see cuts). Ticket sale counters are of marble. A huge baggage department can store luggage without cost to passengers for less-than-24-hour service.

The terminal serves 14 private bus lines and is used for provincial and interprovincial transportation. All of

the bus lines are now using high-speed luxury buses for the longer passenger trips.

Baton Rouge, La.—A new $250,000 Teche Greyhound terminal has been opened in Baton Rouge, Louisiana's capital. H. Vance Greenslit, Teche president, said that, "We believe that this station will be a definite asset to the City of Baton Rouge . . . we hope that through this fine terminal we can do even more to serve the people of this area."

The new terminal is located just south of the Old State Capitol, at 212 St. Philip St., and will handle 96 trips a day. Construction was begun a year ago this month.

Purchases

Denison, Texas — E. W. Smith and his son, J. W. Smith, have purchased the union bus terminal in Denison from Lloyd Shelton.

Chicoutimi, Quebec — Odilon Crevier, proprietor of Autobus Saguenay, Ltd., has purchased the former arena building in Chicoutimi and is converting it to a bus terminal and garage.

Birmingham, Mich.—Great Lakes Greyhound Suburban Lines has purchased the garage and terminal it occupies at Birmingham, Mich. It had formerly been leased. The building contains facilities for repair and maintenance and storage of some 50 buses.

Move

Huntsville, Ontario—Gray Coach Lines, Ltd., has moved its bus terminal in Huntsville to 29 Minerva St.

Plans

Fort Erie, Ontario—Tentative plans have been drawn for the construction of a new bus terminal at the Canadian end of the Peace Bridge, which connects Fort Erie with Buffalo, N. Y. J. W. French, general manager of the Fort Erie Peace Bridge Authority, said that, "We plan to divert bus traffic operating over the bridge in order to prevent congestion, especially during the busy season."

Toronto — Toronto Transportation Commission plans to make extensive alterations to its bus garage on Sherbourne St., near Fleet St., including installation of a drainage system and concrete flooring.

Jersey City, N. J. — Plans for the construction of a bus terminal at Journal Square in Jersey City have been announced. Construction, however, will not begin for at least a year.

The Pennsylvania Railroad said it had leased air rights to two plots adjacent to its Journal Square station to the Terminal Corp. of N. J. The larger plot, on which the terminal will be erected, covers 447 front feet on the concourse from the railroad station to Summitt Ave.

Construction

Montreal — Provincial Transport Co., Ltd., recently awarded the contract for construction of a one-story platform to connect with its new terminal at the corner of Berri and Demontigny Sts., Montreal. When completed, the entire terminal will have cost more than $500,000.

Financing

Kitchener, Ontario — The Kitchener Public Utilities Commission has been granted permission by the City Council to arrange for a 16-year debenture issue of $200,000 to finance construction of a new bus terminal and additions to the former street car barns. Part of the work has already been completed.

WORLD NEWS

LEYLAND, ENGLAND — The biggest single export order ever received by Leyland Motors Ltd., has been signed with the Argentine government.

It calls for delivery of 750 buses, it's worth about 4 million pounds sterling ($11.2 million).

Most of the buses will be placed in service in Buenos Aires as part of a plan by the Argentine president to modernize the city transport system. The new fleet will replace obsolete buses now in use.

The order came to Leyland in the face of world-wide competition, according to the firm's export sales manager, who said that the Argentine government had bids from at least 26 manufacturers in eight countries.

All the buses on order will be diesel-powered, with the six-cylinder engine mounted under the floor between the axles.

Metropolitan-Cammell-Wymann Motor Bodies Ltd. is to build 300 chassis on a sub-contracting basis.

LONDON—The State of Corboda, Argentina, has ordered 150 Olympic type 40-seater buses from Metropolitan-Cammell-Weymann Motor Bodies Ltd.

(The order is independent from the Leyland 750-bus order from the Argentine. See above.)

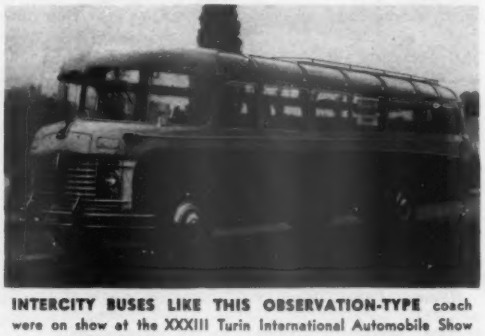
The M-C-W order is valued at about $2.8 million. The buses will be fitted with Leyland engines.

BUENOS AIRES—In still another big bus order, the Argentine government has authorized the purchase of 386 Bedford buses and spare parts from agents in Buenos Aires. The vehicles are already in the country — imported last year from Great Britain — so the purchase doesn't require foreign funds. Total purchase price: 35 million pesos.

LONDON—Britain's state-owned transportation system lost 14 million pounds sterling ($39 million) in 1950.

The deficit compared with one of $56 million in 1949 and one of $14 million in 1948.

The British Transport Commission said the big 1950 loss could have been avoided if requests for fare increases had been granted promptly.



INTERCITY BUSES LIKE THIS OBSERVATION-TYPE coach were on show at the XXXIII Turin International Automobile Show this year. The bus, a 53-passenger model, can be mounted on either a Fiat or an Alfa-Romeo chassis.

INTEGRAL OLYMPIC BUSES like this one have been ordered from Leyland Motors, Ltd., by the Argentine. This is one of a number operated in the Province of Mendoza by the CUYO Division of the Argentine Ministry of Transport. The Leyland order is the largest single purchase ever made from that firm.

LEGAL DECISIONS

FLORIDA—The City of Miami has been defeated in its legal battle to prohibit South Miami Coach Line buses from picking up and discharging passengers within the city limits.

Circuit Judge Charles A. Carroll ruled that the bus company had operated on its present basis for the past 13 years, and that Miami had collected taxes which were figured on the company's manner of operation during that period. The privilege could not be withdrawn, he said.

MASSACHUSETTS — The ABC Vending Corp., of New York, has filed suit for $1 million against the Metropolitan Transit Authority in federal courts.

It's based on the claim that a fare increase has resulted in fewer passengers and a resulting drop in ABC's newsstand revenues.

The company has a five-year contract with the MTA for the operation of newsstands at rapid transit, bus and trolley stops.

It said the contract was signed in the summer of 1948 to run from Jan. 1, 1949.

The company contended in its suit that the trustees of the public-owned greater Boston transportation system concealed the fact that they were contemplating a passenger fare increase.

The increase — from 10 cents to 15 cents—was put into effect in August, 1949.

The company alleged that the MTA had contemplated a passenger fare increase "at least since May 25, 1948," but that the trustees concealed the fact until Nov. 11, 1948.

Under the contract, the vending company agreed to pay the MTA 10 per cent of its gross revenue with guaranteed annual minimum payments ranging from $365,000 in 1949 to $400,000 in 1953.

OHIO—Columbus will have public transportation service at least until Oct. 1, under a temporary court order issued recently by Franklin county Common Pleas Judge Joseph M. Harter, who also held that the Columbus Transit Co. can charge only 45 cents for five tickets, the same rate as that in a municipal bus rate ordinance which went into effect July 18.

The company had threatened to discontinue operations when the new ordinance became effective, and said it could not operate on less than a straight 10-cent fare. The company has been collecting the dime.

The temporary order will be in effect until Oct. 1, when the city's case can be heard "on its merits," Judge Harter said.

OKLAHOMA — The Interstate Commerce Commission has brought suit in federal court against Jordan Bus Co., Hugo, Okla., on 23 charges of operating without an ICC license.

The alleged offenses all occurred in March on routes between Lawton and Temple, Oklahoma, and Wichita Falls, Vernon and Paris, Texas. Each count carries a maximum fine of $100, making the bus company liable for a total fine of $2,300, if convicted on all counts and fined the maximum.

ONTARIO—Officials of Hollinger Bus Line of Toronto said recently that they will appeal an Ontario Supreme Court decision refusing an application for an injunction against the Ontario Labor Relations Board.

The company applied for the injunction against the board to restrain it from hearing a petition for union certification by the Amalgamated.

The board ruled last March 10 that an agreement between the bus company and the Hollinger Bus Line Employees' association was not a bar to a petition by another union.

PENNSYLVANIA — Pennsylvania Greyhound Lines., Inc., has demanded monetary damages from Division 1063 of the Amalgamated for a 48-hour strike which disrupted service in the Pittsburgh area last May.

The suit, which was filed in federal court, said the walkout of drivers halted bus service for two days, in violation of the union contract, which runs until October, 1953.

WASHINGTON — In an unprecedented action, the Seattle City Council unanimously voted its "intention" to confirm Mayor William F. Devin's five appointments to the new Transit Commission, effective Jan. 1. Purpose of the action is to enable the future commission to work closely with the present commission until the incumbent group is dissolved upon payment of the system's indebtedness.

Bruce Shorts, attorney, will be the only holdover from the present commission. New members will be Willard Maxwell, banker; L. Murray Grant, civil engineer; Prof. Donald H. Mackenzie, executive officer of the University of Washington's Department of Accounting; and Charles J. Mentrin, union official.

The council sought to have the members commit themselves on certain policies, but all maintained they could not be expected to commit themselves in advance of specific questions of policy. Commenting on Mayor Devin's suggestions that subsidization of the transit system be undertaken, Mackenzie said he did not believe such subsidization would be necessary for at least 10 years and then should be for equipment only, not for operation. Maxwell said that subsidization would be "unfortunate" but might "be necessary at some future date."

Meanwhile, the number of passengers carried during the first half of this year dropped by 7.4 percent from the same period last year.

IN THE STATE LEGISLATURES

CALIFORNIA—A bill creating a San Francisco Bay Area Rapid Transit Commission has been signed into law by Governor Warren.

The measure appropriates $50,000 to study the rapid transit problems in the San Francisco Bay region. It provides that the commission, composed of 26 members, shall aid governmental bodies in the various cities and counties in the area in investigating their interurban and local transit needs, present and future, and in combining their findings and proposals with those of other cities and counties in the area; in furnishing engineering, planning and other technical assistance where not available; in correlating the findings, and with the aid of qualified engineers, fiscal experts and local representatives, developing a master, coordinated rapid transit plan, including an estimate of the cost of construction, acquisition of necessary lands, equipment and facilities.

The law terminates the commission Dec. 31, 1953, unless, by a two-thirds vote, the commission, on or before Sept. 30, 1953, adopts a resolution declaring that the public welfare and convenience requires that its life shall be extended.

INDIANA—The Indiana Toll Bridge Commission has announced that construction of a toll bridge across the Wabash River connecting Indiana and Illinois may start this fall.

Financial obstacles to the construction of the bridge were removed when the 1951 Illinois Legislature increased that state's gasoline tax rate and boosted truck license fees.

The bridge project had been delayed because Illinois lacked funds to construct a seven-mile approach on its side of the river.

MASSACHUSETTS — An increase of 2 cents in the Massachusetts gasoline tax rate was advocated by Governor Dever recently.

Continued on next page

In a message to the Massachusetts Legislature early this year, the governor had called for a 1½-cent increase in the gasoline tax rate to amortize $200,000,000 in highway bonds.

The issue of the amount of gasoline tax increase, if any, is still pending before the Massachusetts Legislature. The state's present gas tax rate is 3 cents a gallon.

Pointing out that Massachusetts is exceeded by only two states in population density and that there are 90,000 more vehicles on the road this year than last, Governor Dever said:

"It is possible for us to handle this increasing traffic and at the same time hold down or reduce our accident rate. This we are doing by the construction of modern highways, the continuation of which will be made possible by a 2-cent increase in the gasoline tax."

WISCONSIN — Governor Kohler has signed into Wisconsin law a bill increasing the legal length of interurban buses from 35 to 40 feet.

BUS AND TROLLEY BUS DELIVERIES

Motor Bus Deliveries	Number of Buses	Manufacturer	Model and Type	Seats
Airlines Transit Inc. (Mo.)	2	Flxible	182B1-5125IC	35
Amarillo Bus Company (Tex.)	4	GMC	TGH-3101	31
American Bus Lines (Ill.)	2	GMC	PD 4103	41
Asheboro Coach Co. (N. C.)	1	GMC	TGH-3101	31
Atlantic Baggage & Cab Co. (Ga.)	2	Flxible	218B1-51-29IC	29
Atlantic Greyhound Corp. (W.Va.)	11	GMC	PD 4103	41
Atlantic Stages Inc. (Ga.)	3	Aerocoach	372 M H.	37
Auch Inter-Borough Transit (Pa.)	2	GMC	TGH-3101	31
Balcer Bros. Mfg. Coach Co. (Mich.)	1	GMC		
Batavia Mtr. Coach (N. Y.)	1	GMC	TGH-2708	27
Battle Creek Coach Co. (Mich.)	6	GMC	TGH-3101	31
Benicia Vallejo Stage Line (Calif.)	1	GMC	TGH-3101	31
Beninger Transp. Service (Calif.)	1	GMC	TGH-3101	31
B-K-W Coach Line (Pa.)	2	GMC	TGH-3101	31
Blue Bird Coach Line (N. Y.)	1	GMC	TGH-3101	31
Bolt-Highway Wolf Transit Co. (Mich.)	1	GMC	TGH-3101	31
Bossier-Shreveport Transp. Co. (La.)	4	GMC	TGH-3101	31
Brewsillon Co. (Ind.)	2	Marmon-Herrington	8MBC	29
Brooks Bus Lines (Ky.)	1	GMC	PD 4103	41
Brunswick Transportation Co. Inc. (Maine)	1	Flxible	218B1-51-33SU	33
Buenaventura (City of) (Calif.)	2	GMC	TGH-3101	31
O. H. Byerly (Pa.)	1	Flxible	218B1-51-37SU	37
California Bus Service (Pa.)	1	GMC	TGH-3101	31
Canton & Blue Hill Bus Line Inc (Mass.)	1	Marmon-Herrington	8M2IIC	35
Center Service (Nebr.)	1	Flxible	218B1-51-29IC	29
Central Grey. Lines (Ohio)	13	GMC	PD 4103	41
Chenango Valley Transit (N. Y.)	1	Aerocoach	373 MC	37
Chestnut Hill Bus Corp. (Conn.)	1	GMC	TGH-3101	31
Chicago Transit Authority (Ill.)	38	Marmon-Herrington	TC-49	49
Cinn. St. Ry. Co. (Ohio)	10	Mack	C 50D	50
City Bus Co. (Okla.)	26	GMC	TGH-3101	31
The City Railway Co. (Ohio)	3	GMC	TGH-3101	31
City Rapid Transit (Ohio)	5	GMC	TGH-3101	31
City Transportation Co. (Texas)	27	GMC	TGH-2708	27
Cleveland-Lorain Hwy. Coach (Ohio)	1	GMC	TDM-4509	45
Cleveland Trans. Sys (Ohio)	50	Mack	C-50D	50
Community Coach Co. (Ill.)	2	Marmon-Herrington	8M2BA	32
Communitv Mtr. Bus Co. (Va.)	3	GMC	TGH-3101	31
Community Transit Lines (Calif.)	1	GMC	TGH-3101	31
Connecticut Co. (Conn.)	20	Mack	C-45D	45
J. J. Dawson (Pa.)	2	Mack	C-37D	37
City of Dearborn (Mich.)	1	Flxible	218B1-51-33IC	33
DeBolt Transit Co. (Pa.)	2	Mack	C-37D	37
Decatur Transit Co. (Ala.)	2	GMC	TGH-3101	31
Dept. of Street Railways (City of Detroit) (Mich.)	18	St. Louis Car Co.	St. L.	48
Dixie Traction Co. (Ky.)	1	Flxible	218B1-51-24IC	24
Douglas Aircraft Co. (Calif.)	3	GMC	TGH-3101	31
Edwards Mtr. Transit Co. (Pa.)	1	GMC	PD 4103	41
Ensenat & Co. (La.)	4	Flxible	218B1-51-29IC	29
Ferguson Broadway Bus Line (Mo.)	3	Marmon-Herrington	8M2BC	35
Ft. Crook Bus Lines (Nebr.)	4	GMC	TGH-3101	31
Foster Transportation Inc. (Calif.)	1	Marmon-Herrington	8M2BA	32
Galveston Transit Co. (Texas)	3	GMC	TGH-3101	31
Gen'l Amer. Transp. Corp.	1	Aerocoach	372 MD	37
Gradison Auto Bus Co. Inc. (Pa.)	2	Flxible	218F1-51-33-SU	33
The Grav Line (Wash.)	1	Flxible	218B6-51-33-SU	37
Great Lake Grey. Lines (Mich.)	2	GMC	PD 4103	41
Great Lakes Marmon-Herrington Coach Co. (Mich.)	1	Marmon-Herrington	8M2BA	32
Gulf Transport Co. (Ala.)	5	GMC	PD 4103	41
Hattiesburg City Lines (Miss.)	3	GMC	TGH-3101	31
Hempstead Bus Corp. (N. Y.)	10	Mack	C-45D	45
Hudson Bus Lines (Mass.)	1	Marmon-Herrington	8M2BC	35
Intercity Coach Co. (Conn.)	4	Flxible	218B7-51-37SU	37
Intermountain Transp. Co. (Mont.)	5	GMC	PD 4103	41
Interstate Transit Lines (Ind.)	5	GMC	PD 4103	41
Keansburg Steamboat Co. (N. J.)	4	Aerocoach	372 MC	37
Kingston City Transp. Co. (N. Y.)	2	GMC	TGH-3101	31
Lafayette Transit Co. (La.)	2	Marmon-Herrington	8M2BB	32
Lake Shore Coach Lines Inc. (Mich.)	7	GMC	TGH-3101	31
Laredo Transportation Co. (Texas)	4	Marmon-Herrington	8M2BB	33
Las Vegas Tonopah Reno Stagelines (Nev.)	1	Beck	Mainliner	37
Laurel City Lines (Miss.)	2	GMC	TGH-3101	31
Lexington Railway System (Ky.)	6	GMC	TGH-3101	31
Lincoln Coach Lines (Pa.)	1	GMC	TGH-3101	31
Lockport Bus Lines (N. Y.)	2	GMC	TGH-3101	31
Lower Valley Bus Lines (Texas)	4	GMC	TGH-3101	31
Lubbock Bus Co. (Texas)	6	GMC	TGH-3101	31
Marietta Coach Co. (Ga.)	2	GMC	TGH-3101	31
Meadville City Lines (Penna.)	1	Flxible	218B1-51-33SU	33
Meridian City Lines Inc. (Miss.)	2	GMC	TGH-3101	31
New England Grey. Lines Inc. (Mass.)	5	GMC	PD 4103	41
New Haven & Shore Line Ry. Co. (Conn.)	4	GMC	TGH-3612	36
Nueces Transportation Co. (Tex.)	7	Marmon-Herrington	8M2BB	32
Oklahoma Transportation (Okla.)	3	GMC	PD 4103	41
Orange & Black Bus Lines (N. J.)	5	Mack	C-45SD	41
Ortman-Stewart Transportation Co. (Ohio)	1	Marmon-Herrington	8M2BA	31
Pacific Greyhound Lines (Calif.)	12	GMC	TDM 5103	51
Pacific Trailways (Oreg.)	3	Aerocoach	373MC	37
P. C. T. Stages (Nebr.)	2	Beck	B-29	29
Pennsylvania Greyhound Lines (Ohio)	7	GMC	PD 4103	41
Queen City Coach Co. (N. C.)	9	GMC	PD 4103	41
Richmond Greyhound Lines Inc. (Va.)	5	GMC	PD 4103	41
Ridge Lines (Penna.)	1	Marmon-Herrington	8MBA	27
St. Louis Pub. Service Co. (Mo.)	25	Mack	C-50D	50
San Angelo (City of) (Texas)	2	Marmon-Herrington	8M2BB	32
Shreveport Railways Co. (La.)	7	GMC	TGH-3101	31
Sioux Transit Co. (S. D.)	4	GMC	TGH-3101	31
Smoky Mountain Stages (N. C.)	1	GMC	PD 4103	41
Southeastern Greyhound Lines (Ky.)	7	GMC	PD 4103	41
South Norfolk Transit Co. Inc. (Va.)	1	Fitzjohn	Citvlines	33
State Bridge Commission of Mich.	2	GMC	TGH-2708	27
Suburban Transit Corp. (N. J.)	5	GMC	TGH-3101	31
Suburban Transp. Co. (Kans.)	6	GMC	TGH-3101	31
Suffolk City Transit Lines Inc. (Va.)	2	Marmon-Herrington	8MBA	27
Teton Transportation Co. (Idaho)	1	Flxible	218B1-51-29IC	29
Transit Service Corp. (Mo.)	12	GMC	TGH-3101	31
Tyler Transit Co. (Texas)	1	GMC	TGH-2708	27
Vicksburg City Lines (Miss.)	3	GMC	TGH-3101	31
Webb's City (Fla.)	1	Flxible	218B1-51-33IC	33
Wyatt Lines Inc. (Va.)	1	GMC	TGH-3101	31
Miscellaneous Deliveries				
Central State Teacher College (Wisc.)	1	Flxible	218B1-51-29IC	29
Father Flanagan's Boys Home (Nebr.)	1	GMC	TGH-3101	31
GMO Export Whse. (N. J.)	1	GMC	TDH-3612	36
Ord. Tank Auto. Ctr. (Mich.)	5	GMC	TDH-3612	36
San Foaguin Hospital (County of) (Calif.)	1	GMC	TGH-3101	31
Tiffin Public Service Corp. (Ohio)	1	GMC	TGH-2708	27
U. S. Govt. (D. C.)	17	Southern	S-36M	37
Western Ill. State Teachers College (Illinois)	1	Aerocoach	373MH	37
Foreign Deliveries				
Lineo DeAutobuses Mexico Aguascalientes-Durango (Mexico D. F.)	1	Flxible	218B1-51-28IC	28
Toronto Transp. Commission (Toronto)	10	Mark	C50D	50
The White Mtr. Co. of Canada Ltd. (Montreal Quebec)	1	Flxible	218B1-51-29IC	29

NOTE: This list is based on monthly reports from manufacturers. Not all manufacturers report regularly, consequently, this list is not to be considered complete.

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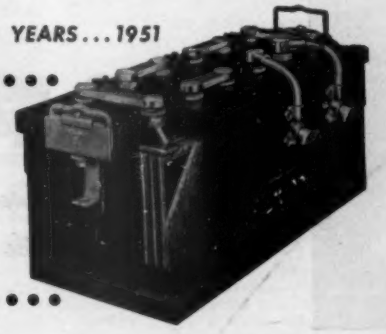

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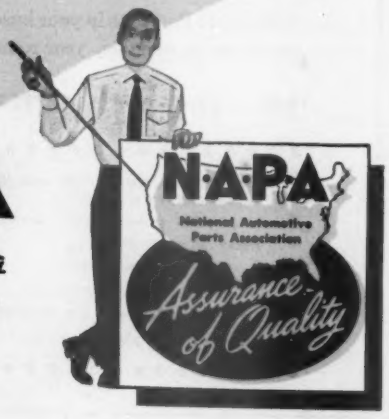

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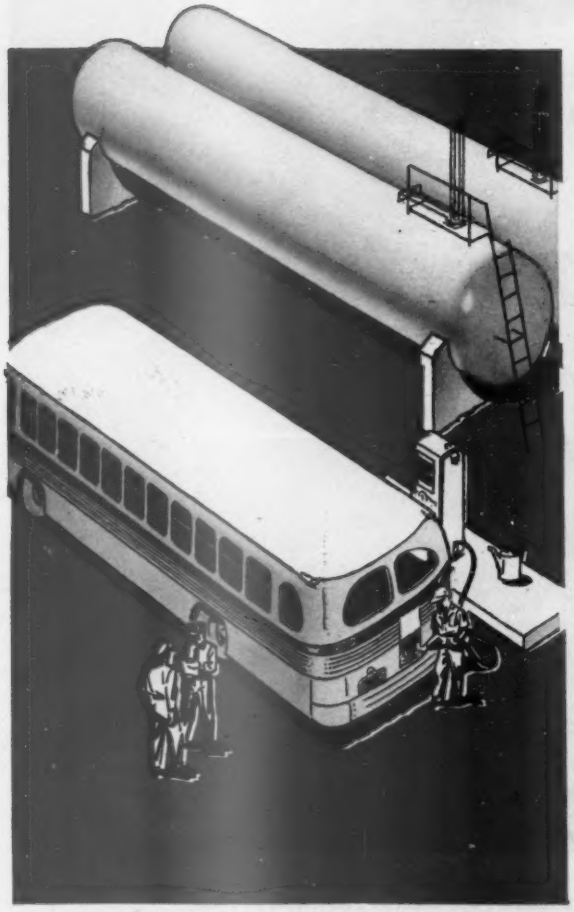

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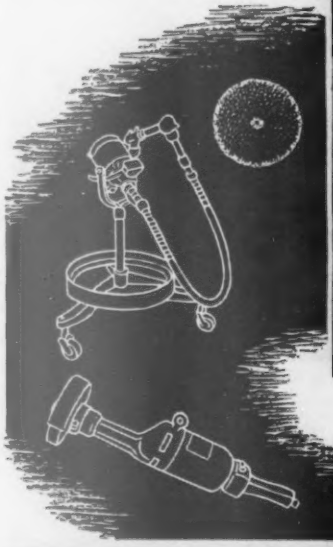

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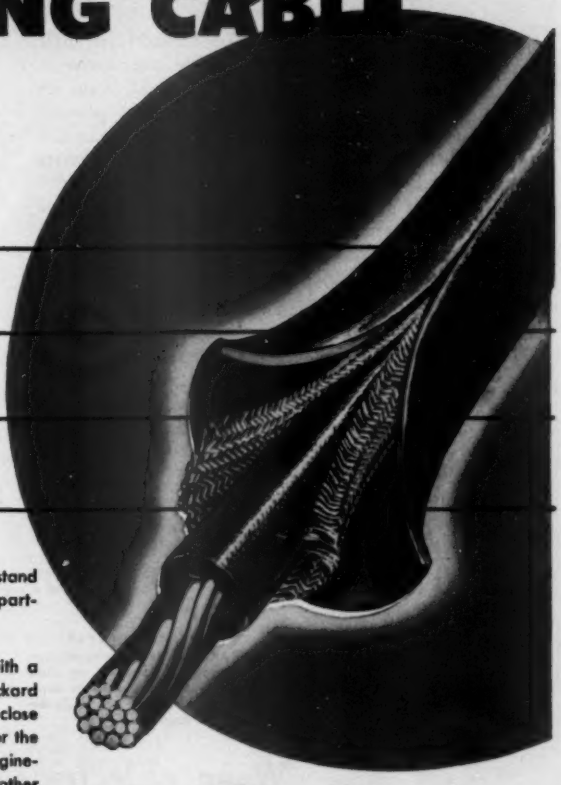


At last it's here—a lighting cable that will withstand the severe conditions that exist in the engine compartments of buses and in other tough locations.

It's a Packard cable, of course—a new cable with a glass braid between two walls of special Packard synthetic insulation—a new cable developed in close cooperation with eminent automotive engineers for the express purpose of successfully combating engine-compartment conditions that are too severe for other types of lighting cable.

In the interests of better performance and longer service from your vehicles, investigate this new Packard cable. You'll find it will lower maintenance costs by long outlasting any similar-purpose cable.

Packard
REG. U.S. PAT. OFF.

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

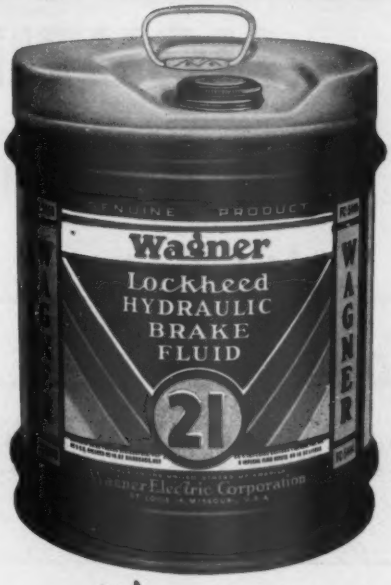
For All Seasons

WAGNER LOCKHEED BRAKE FLUID

functions under all driving temperatures

You can't beat Wagner Lockheed Hydraulic Brake Fluid for dependable performance under all operating conditions . . . in all seasons. It mixes with any other approved type of fluid your customer may have in his brake system. Wagner fluid maintains its chemical characteristics and lubricates the brake system over the operating range of temperatures. It forms no gummy residue and will not harm metal or rubber parts. Surpasses S. A. E. standards.

You can depend on Wagner quality because Wagner products are used as original equipment by automobile, truck and trailer manufacturers. See your nearest Wagner Jobber, or write us for details. Ask for Bulletin HU-17H on "Hydraulic Brake Service."



. . . and all from ONE source . . . . . your Wagner jobber . . . .

WAGNER LOCKHEED HYDRAULIC BRAKE PARTS—*a complete line,* covering *all* makes of cars and trucks, including seldom used, slow-moving parts not easily obtainable elsewhere.

WAGNER CoMaX BRAKE LINING—offers *complete* coverage for *all* your needs . . . in sets, rolls, blocks, slabs and cut segments. A non-compressible, long-wearing lining of uniform texture.

Wagner Electric Corporation

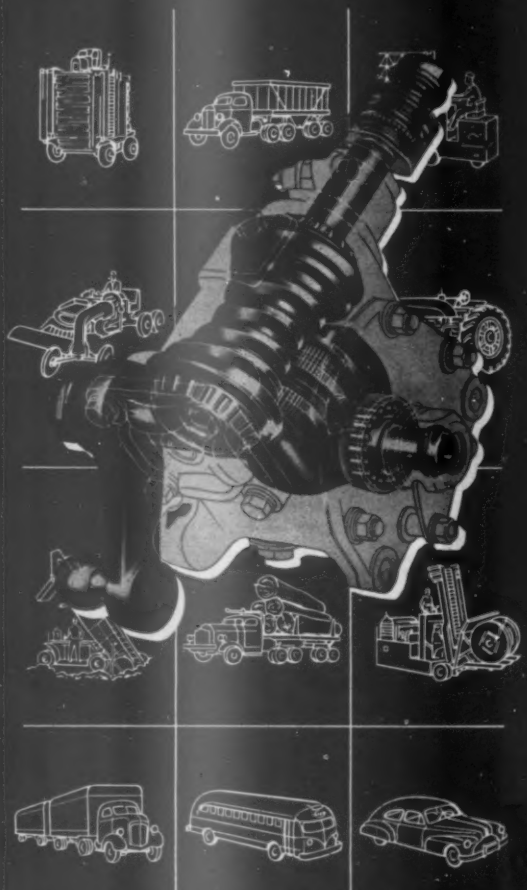
6461 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

(Branches in Principal Cities and in Canada)

1951-10

Wagner ...the best known name in brake service

Gemmer Easy Steering



Gemmer Has Been Making
Steering Gears for Motor Vehicles
for 43 Years

Sealed Power

PAX EBONITED PISTONS

are the only pistons made in which section of greatest wear can be replaced!

Every PAX Piston Equipped with GI-60 Contracting Groove Insert!

Every Sealed Power PAX Piston comes factory-equipped with the famous Sealed Power GI-60 Contracting Groove Insert—the only dependable, economical, long-lasting preventive of top ring groove wear!

This is a feature of vast importance to every fleet operator, because the top ring groove is the part of every piston that wears out first—the part subject to the greatest heat and the greatest pressure, and the part protected by the least lubrication.

By installing the Sealed Power GI-60 in every PAX Piston, Sealed Power has added thousands of miles of service!

Sealed Power PAX Pistons are manufactured from genuine Lo-Ex* Virgin Aluminum Alloy with silicon base, which dissipates heat most efficiently. Special Eboniting process assures smoother-running engine because piston surface is oil-impregnated, oil-absorbing. T-slot design, cam-ground, with rugged internal construction for extra strength and fast heat transfer.

*Registered trade mark of Aluminum Co. of America.

Write for name of nearest distributor

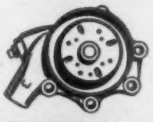
SEALED POWER CORPORATION
MUSKEGON, MICHIGAN

Always use Sealed Power parts for best results

HEAVY DUTY PISTONS—Aluminum or cast iron as indicated; exclusive T-slot design, cam ground, ruggedly designed, heat treated. Equal to or better than original equipment.

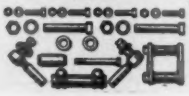
WET OR DRY SLEEVES—Machined from closely controlled castings, with exceptionally fine grain and dense molecular structure for long wear.

VALVES—Sealed Power Valves and valve parts are made from the correct grade of chrome nickel alloy steel for each engine, for finest performance and maximum service.



WATER PUMPS—Manufactured from finest quality materials to highest standards. Our line is complete.

KING BOLTS & BUSHINGS—Manufactured from highest quality forgings, and heat treated to meet your exact requirements.



TIE RODS & SHACKLES—Sealed Power Tie Rods, Spring Shackles, and Front Wheel Suspension Parts meet specifications of original equipment.

GM Diesels

PLAY INTEGRAL PART IN
WELL-PLANNED PROGRAM
OF REHABILITATION

No.1 *in*

CINCINNATI

FIVE YEARS AGO, The Cincinnati Street Railway Company started a rehabilitation program which has developed a system now a model pattern which the entire transportation industry could well follow.

It was not an easy job. At the time the program was started, in 1947, more than two thirds of the service was with electric rail cars, all but 54 of which were of outmoded types.

The first step was to plan for the abandonment of rail service to provide a more simplified, economical, and flexible operation. Today, the system is entirely on rubber.

Routes and schedules were overlapped. Property holdings needed revamping. Older equipment with high operating cost was a drain on revenue. All this has been corrected.

Ten former operating divisions, all but one housed in old carbarns, have been consolidated into five divisions with new or thoroughly modernized housing. Supervisory, time, and material costs have been substantially reduced. Routes and schedules have been thoroughly reviewed and rearranged, with definite improvements in service and some reduction in mileage.

The city is hilly—service to some communities is aggravated by steep grades, circuitous alignment at different street levels. Divided between east and west by Mill Creek Valley, with numerous railroads and switching yards, the only means of travel between the two sections is over occasional viaducts.

This causes highly concentrated traffic. With the removal of streetcars, loading platforms are being eliminated. One-way streets soon will be instituted in the downtown

PERFORMANCE AND ECONOMY

Oper. Year	No.	Model	Year in Service	Miles/Yr.	Accum. Miles	Av. Miles Per Coach	Av. Miles Per Gal.
Accum. & 1947	13	TDH-3601	1941	627,847	5,107,090	392,853	4.197
	10	TDH-4007	1945	1,793,750	1,953,913	195,391	4.584
	20	TDH-4506	1945-6		2,743,392	132,169	
	27	TDH-4507	1947	1,378,808	1,359,847	50,364	4.927
All Diesels	70			3,800,105	11,164,242		4.631
All Diesels	Maint. Cost/Mi. 3.244c —	Fuel Cost/Mi. 2.676c —	Lubr. Cost/Mi. .213c —	Total 6.133c			
1948	13	TDH-3601	1941	570,079	5,677,169	436,705	4.246
	10	TDH-4007	1945	1,412,670	6,110,511	203,681	4.477
	20	TDH-4506	1945-6				
	27	TDH-4507	1947	2,160,961	3,520,798	95,156	4.786
	10	TDH-4507	1948				
All Diesels	80			4,143,700	15,308,478		4.60
All Diesels	Maint. Cost/Mi. 2.826c —	Fuel Cost/Mi. 3.329c —	Lubr. Cost/Mi. .383c —	Total 7.432c			
1949	13	TDH-3601	1941	473,822	6,150,991	473,130	4.293
	10	TDH-4007	1945	1,293,287	7,403,298	246,776	4.351
	20	TDH-4506	1945-6				
	27	TDH-4507	1947	2,534,589	6,055,387	163,658	4.750
	10	TDH-4507	1948				
	20	TDH-4509	1949	919,441	919,441	45,972	4.483
All Diesels	100			5,221,109	20,529,067		4.585
All Diesels	Maint. Cost/Mi. 3.256c —	Fuel Cost/Mi. 3.149c —	Lubr. Cost/Mi. .364c —	Total 6.769c			
1950	13	TDH-3601	1941	547,294	6,698,285	515,252	4.485
	10	TDH-4007	1945	1,215,662	8,618,960	287,298	4.236
	20	TDH-4506	1945-6				
	27	TDH-4507	1947	2,438,479	8,493,836	229,563	4.715
	10	TDH-4507	1948				
	20	TDH-4509	1949	1,333,398	2,252,839	75,094	4.169
	10	TDH-4509	1950				
All Diesels	110			5,534,833	26,063,920		4.442
All Diesels	Maint. Cost/Mi. 3.456c —	Fuel Cost/Mi. 3.197c —	Lubr. Cost/Mi. .362c —	Total 7.099c			
1/1/51 - 6/30/51	13	TDH-3601	1941	189,503	6,887,788	529,830	4.471
	10	TDH-4007	1945	364,490	8,983,450	299,448	4.094
	20	TDH-4506	1945-6				
	27	TDH-4507	1947	931,607	9,425,443	254,742	4.55
	10	TDH-4507	1948				
	20	TDH-4509	1949	768,302	3,021,141	100,705	4.108
	10	TDH-4509	1950				
	80	TDH-5103	1951	1,713,718	1,713,718	21,421	4.116
All Diesels	190			3,967,620	30,031,540		4.224
All Diesels	Maint. Cost/Mi. 3.277c —	Fuel Cost/Mi. 3.438c —	Lubr. Cost/Mi. .276c —	Total 6.991c			

With

OL

ASES

cisco 28, Calif.

areas. Traffic congestion during the rush hours should be materially relieved.

Through intelligent planning, the company has steadily "upgraded" its fleet of vehicles from 36-passenger to 51-passenger vehicles, providing a saving in necessary vehicle units.

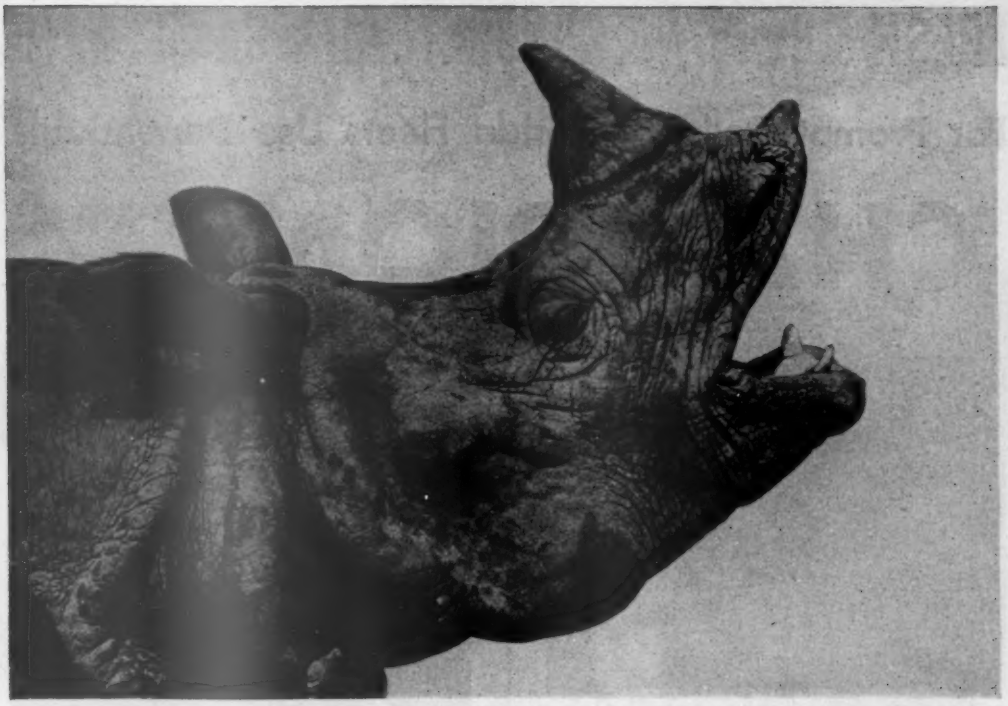
For many years, GM Diesels have been No. 1 on this property. During 1950, a fleet of 110 GM Diesels traveled 5,534,833 miles, an average of over 50,000 miles per vehicle, at a cost of 7.0c per mile for fuel, lubrication, and maintenance. (See page 3 for complete Diesel figures).

This year, 80 GM Diesel Coaches of 51-passenger capacity have joined the fleet, and in the first six months operated 1,713,718 miles at 4.116 miles per gallon of fuel.

The rehabilitation program was financed from depreciation reserves and a revolving credit provided by local banks. The equipment loans are being repaid rapidly. During the period, the company's bonded debt has been steadily reduced. Bondholders are pleased at the progress being made. The public and city officials like the revamped service.

GM Coach salutes The Cincinnati Street Railway Company for a hard job well done. We are indeed proud that GM Diesel Coaches have played an integral role in the development of this outstanding transportation system.

GMC TRUCK & COACH DIVISION GM COACH GENERAL MOTORS CORPORATION



TOUGH

. . . Like the "Film of Protection" You Get With

VEEDOL 90 H.D.

THAT *extra toughness* of VEEDOL 90 H.D. is a natural property of carefully selected, "lube" crudes from which this great motor oil is refined. It's one of the important reasons why VEEDOL 90 H.D. has tougher resistance to heat and wear . . . gives longer mileage between major overhauls.

In VEEDOL 90 H.D. these naturally finer crudes are expertly refined and blended with the scientific additives that reduce gum and sludge in motors, protect bearings from corrosion, and minimize lacquering of pistons and valve stems . . . *even under continuous full-throttle operation!*

Give your fleet the advantage of this tougher "Film of Protection"... by specifying VEEDOL 90 H.D.!

CLEANS AS YOU DRIVE!

VEEDOL
OILS AND GREASES

TIDE WATER ASSOCIATED OIL COMPANY

17 Battery Place, New York 4, N. Y. • Thompson Building, Tulsa 2, Oklahoma • 79 New Montgomery Street, San Francisco 20, Calif.

FRESH BREAD AND CONCRETE-MIX CAN'T WAIT!

For Prompt Delivery Florida Fleets Use Dependable

CHAMPION SPARK PLUGS

Fuchs Baking Co., Miami, operates 80 dependable vehicles and uses Champions throughout.

Mr. Geo. G. Hughes, shop foreman and Mr. Neil Jeffery

"It is of utmost importance that we serve our customers with prompt, dependable service. We have found Champion Spark Plugs a great factor in maintaining this service."

Neil Jeffery, Supt. of Maint.

Alfred Destin Co., Miami Beach, Champion users for 15 years, report complete satisfaction.

"Our type operation calls for spark plugs we can depend on at all times. That's why we've specified Champions for 15 straight years."

F. F. Schoen
Supt. of Maint.

FOLLOW THE EXPERTS-

SPECIFY CHAMPIONS FOR YOUR FLEET

CHAMPION SPARK PLUG COMPANY
TOLEDO 1, OHIO

Listen to the CHAMPION ROLL CALL . . . Harry Wismer's fast sportscast every Friday night, over the ABC network

and now In Nebraska....

Two Beck 29's delivered to P.C.T. Stages of Grand Island, Nebraska

and In North Carolina...

Four 37 passenger Beck Mainliners delivered to Queen City Trailways, Charlotte, North Carolina

These high quality Beck models are available with optional power plants — International Gasoline, or Cummins Diesel. All components are standard well known bus units assuring satisfactory operating performance. Write or wire for demonstrations or quotations.

C. D. BECK & COMPANY, INC., SIDNEY, OHIO, U.S.A.

THE ANSWER TO YOUR BATTERY PROBLEMS

An inadequate generating system is the basic cause of battery troubles. Today's increasing load of accessories takes more current out of the battery than a conventional d.c. generator can put back in. Slow driving, long idling periods and short trips cut current output further. The result: heavy expenses for replacement and recharging of batteries, breakdown of equipment, lost man-hours. A costly, heavy-duty battery is no solution. The answer is replacement of the conventional d.c. generator with the revolutionary Leece-Neville AC-DC Alternator System.

25 TO 35 AMPERES IDLING

With engine idling, a conventional d.c. generator shows "discharge" on the ammeter. But the L-N Alternator under this condition is producing 25 to 35 amperes . . . enough current to operate accessories and charge the battery too. Furthermore, the Alternator delivers its full capacity at low engine speed and maintains full output at top speed.

CONSTANT FIXED VOLTAGE

Variation in voltage shortens the life of electrical components and is often responsible for damage to the battery. The rugged, highly accurate L-N Regulator protects all electrical units by its sensitive control. Batteries stay fully charged with *no overcharging*. For the complete story of the L-N Regulator, write for special bulletin.

PERFORMANCE PROVED

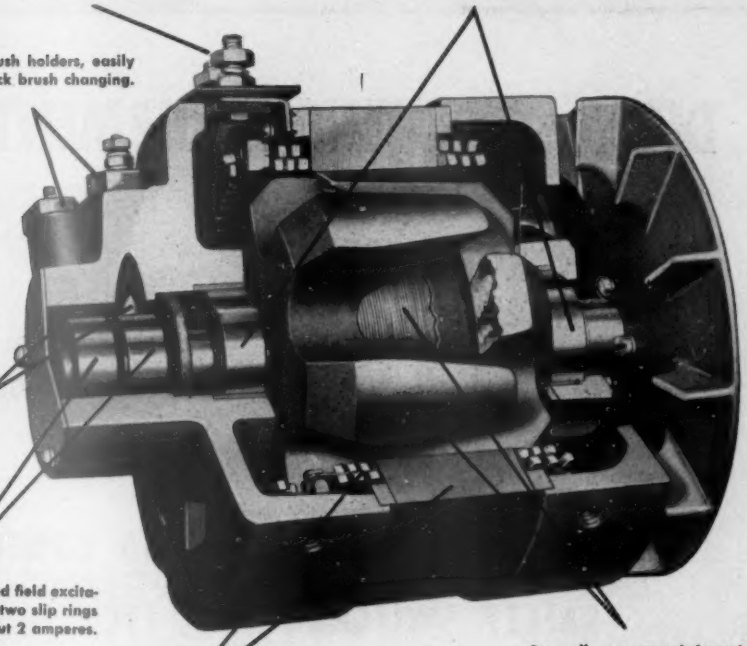
Since 1946, L-N Alternators have been producing more current on thousands of installations. Many units have run 100,000 to 400,000 miles and more!

There are Alternator Systems rated at 60 to 175 amps. for 12-volt systems.

For all the facts, send for the new, illustrated bulletin on the L-N Alternator System. The Leece-Neville Company, Cleveland 14, Ohio.

Automotive Electrical Equipment for over 40 years. Distributors in principal cities . . . Service Stations everywhere.

CUTAWAY VIEW
OF TYPICAL LEECE-NEVILLE ALTERNATOR


Stator terminals carry power produced by Alternator.
Prepacked, sealed ball bearings.
Cartridge-type brush holders, easily accessible for quick brush changing.
Brushes, 5/16" diameter, carry only about 2 amperes field current.
Fully insulated field excitation through two slip rings carrying about 2 amperes.
Ruggedly constructed, forged fingers hold doughnut shaped coil which creates rotating magnetic field.
Laminated stator has simple, preformed winding with few turns, produces 3-phase A.C. power.

LN

CONSOL Equip

FOR BUSES • TROLLEY COACHES

DOOR OPERATING EQUIPMENT...

Electric or Pneumatic

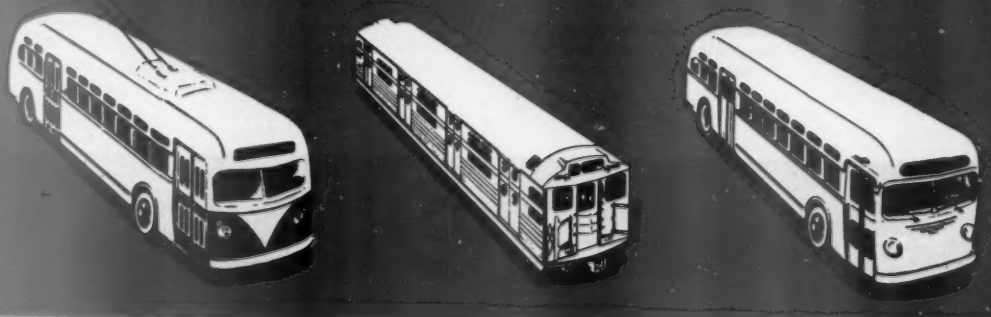
Treadles and Sensitive Edges

...And all related Safety Equipment

ELECTRIC HEATING

HEATING AND VENTILATING CONTROL

SAFETY SWITCHBOARDS, ETC.



mentIDATED

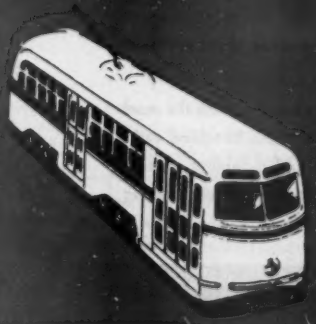
P.C.C. CARS • RAPID TRANSIT CARS

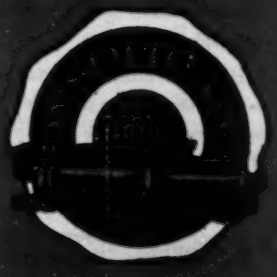
Consolidated Equipment has nearly 60 years of specialized EXPERIENCE behind it. It is engineered and built to assure many years of heavy service. Its dependability has been proved by MILLIONS of car and bus miles of performance, with a minimum of maintenance.

This explains why more and more of the nation's transit properties are specifying CONSOLIDATED for their new vehicles —they know they will get the proper equipment, and cooperation in working out their problems.

CONSOLIDATED CAR HEATING COMPANY, INC.

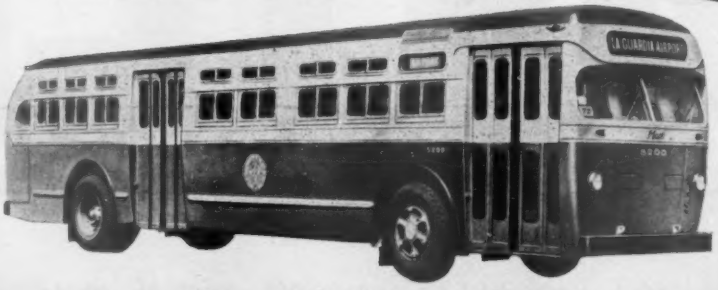
CHICAGO ALBANY NEW YORK

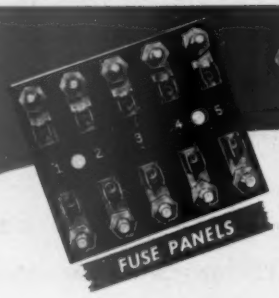


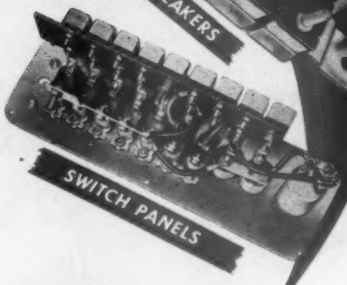


ROHDEN ..MEETS THE HIGHEST STANDARDS OF BUS DESIGN

The MACK C-50







The Mack Manufacturing Corporation is another of the major bus manufacturers who are Rohden customers. They use Rohden fuse panels and junction blocks.

One or more Rohden products were used on more than 90% of all buses produced in U. S. A. in 1950.

The extensive usage of Rohden products is indicative of the importance and confidence placed in them. Dependability of the electrical systems in buses over maximum years of operation counts heavily in the savings made in maintenance and replacement costs.

Each Rohden product was designed in keeping with the most modern engineering principles and each has its added value in the matter of ease of installation and durability of construction. We are ready at all times to give full engineering cooperation.

ROHDEN MANUFACTURING CO.

Designers · Engineers

of

- "Shortstop" Circuit Breakers
- Switch and Fuse Panels
- Junction Blocks
- Instrument Panels

4739 MONTROSE AVE. --- CHICAGO 41, ILL.

Mack SALUTES

1900

THE FIRST BUS WAS A **MACK**

100 Years of Transit Progress

1951

THE FINEST BUS IS STILL A **MACK**

A century ago, the horse-drawn streetcar heralded the advent of organized, scheduled surface transportation. Today, this strong industry operates on city and intercity routes more than 100,000 vehicles —and over three-quarters of these are buses.

As the pioneer manufacturer of buses, Mack is proud of the contributions this type of transit vehicle has made. Its flexible and economical performance, its convenience and its unique adaptability to modern traffic conditions have made the bus the overwhelming choice of American operators.

Like the transit industry, Mack is never content to rest on present achievement. Tomorrow—as yesterday and today—through even greater economy and performance Mack will continue to provide "The Best Buses Built."

it's the Passenger's favorite

...because it's THE MOST COMFORTABLE BUS ON THE CITY STREETS...

Easier to get in and out...

More effective passenger interchange allowed by double-width, 45" front and rear doors (optional) and more effective loading areas. Standee vision enhanced by eye-level standee windows.

no need for squeezing...shoving...stooping

Rides best...

Smooth, steady ride aided by progressive type springs at front where load variations are greatest, plus rubber Shock Insulators at spring ends.

no bouncing...billowing ...bumping

Mack C-50

Free from stuffy air...

Constant supply of fresh air—warm or cool—provided by pressurized, automatic Mack Evenflow system.

No drafts...blasts...window fogging

Clearest interior Lighting...

Even, clear illumination provided for every passenger by optional fluorescent or incandescent lighting.

No eyestrain...no squinting

MR. OPERATOR...

You serve your interests best when you serve your *patrons* best.

To best serve your patrons, use the bus they like best.

Let the Mack C-50 itself show you why it's so popular with passengers—and favorite of *all* the important four. Arrange for a demonstration today...

see why...

YOUR CHOICE

Mack C-50

FOR HEAVY-DUTY

OPERATING ECONOMY

is bound to be the

favorite

with your

IMPORTANT

4

PASSENGERS
for Comfort

DRIVERS
for Handling Ease

MAINTENANCE MEN
for Servicing Simplicity

TRAFFIC MANAGERS
for Schedule Dependability

modernize with **Mack** DIESEL BUSES

MACK MANUFACTURING CORPORATION
Bus Division
Empire State Building, New York 1, N. Y.

One of 400 new Mack C-50 buses delivered to the New York Board of Transportation. Built by the Bus Division of the Mack Manufacturing Corporation, these buses are equipped with Safety Glass by Pittsburgh in sash supplied by Transportation Sash Company, Tipton, Pennsylvania.

New York gets 400 Mack C-50's

with *Safety Glass* BY PITTSBURGH

400 OF THESE BIG MACK C-50'S are rolling the streets of New York City today, carrying as many as 135 passengers each. Here again, Safety Glass by Pittsburgh plays an important role in assuring passengers comfort and safety as they ride.

Ventilation and vision are provided for standing passengers as well as those seated. Both main and standee windows are of the sliding type and are glazed with Duolite Safety Glass. Door lights and rear windows are Duolite too.

Divided windshields give the driver curb-to-curb vision in congested metropolitan traffic. For applications like this, Duplate Safety Glass is the ideal choice.

Many bus manufacturers have standardized on Safety Glass by Pittsburgh for windows and windshields. The service records of Pittsburgh Safety Glass are your best guide to satisfaction in both new installations and replacements.

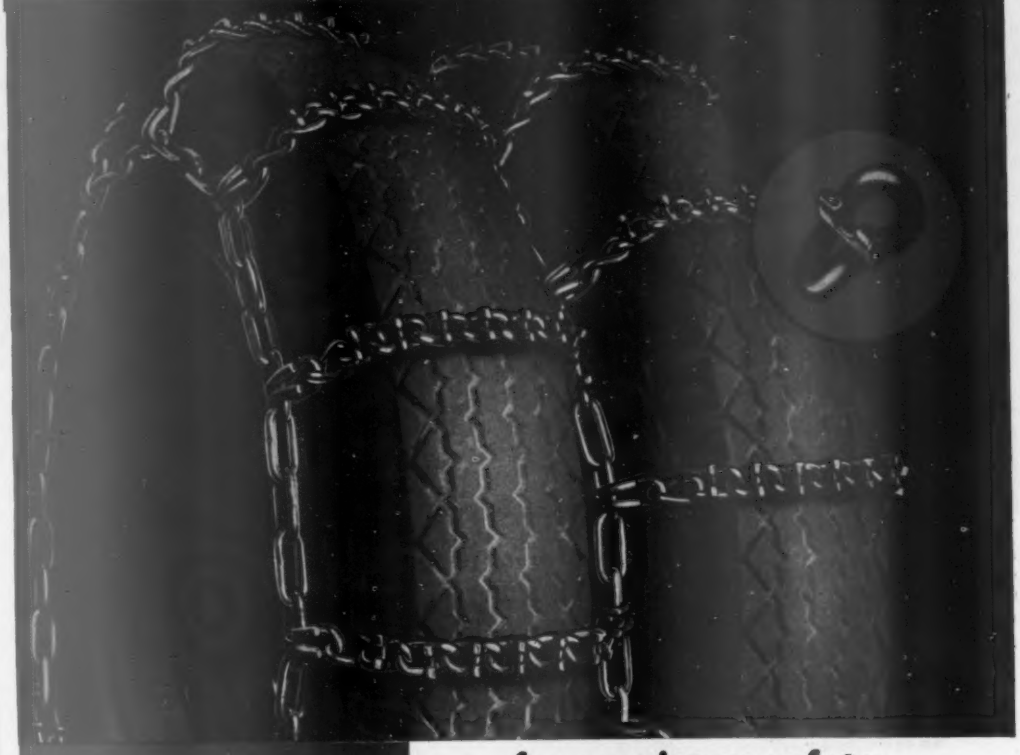
When you need Safety Glass, go to your Pittsburgh dealer. He'll meet your needs with top-quality glass, bearing the famous Duplate or Duolite trade-mark on every piece. Pittsburgh Plate Glass Company, Room 2217—1 Grant Building, Pittsburgh 19, Pa.

Look for one of these trade-marks, etched in the corner of the glass.

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

CAMPBELL *Lug-Reinforced* TIRE CHAINS



...for maximum safety... minimum operating cost

Only Campbell Chains have the patented *Lug-Reinforced* construction that means greater traction on ice and snow . . . greater traction that provides maximum protection against skids and side-slips.

What's more, the *extra* metal in the lugs means that Campbell Chains wear longer and cut link-breakage to a minimum . . . mean lowest operating cost per mile on icy or snow-covered roads.

CAMPBELL CHAIN *Company*

Main Office—York, Pa.

Factories—York, Pa., and West Burlington, Iowa

CAMPBELL TRUCK AND BUS CHAINS ARE EASY TO IDENTIFY!

Mud Service Single Pneumatic | Highway Service Dual Pneumatic | Lug-Reinforced Dual-Triple | Lug-Reinforced Interchangeable Cross Chains

Campbell color-coded bags save time in handling chains and make chain storage much easier. Available in three grades for all cars, trucks and buses: *Lug-Reinforced* for greatest traction and longest wear; *Highway Service* for regular use; *Mud Service* for off-the-road duty.

Campbell *Lug-Reinforced* Tire Chains for fleet passenger car service are packed in sturdy boxes, and every box includes the easy-to-use Chain Applier.

Make sure you have a set of Campbell Tire Chains for every unit in your fleet!

GUESSWORK or VISIBLE PROOF . . .

You Need This Modern Tool To Check Your Oil !

Keep your fleet fit . . . by checking oil the modern, scientific Dirtector way!

Today, with modern Heavy Duty oils in the picture you're as out-of-date judging the condition of motor oil by the dipstick or on a piece of paper as you'd be trying to pour your gasoline from a barrel!

Only with the WIX Dirtector can you know the actual condition of the oil in your vehicles. Whether light or dark—clear clean or dirty—the WIX Dirtector gives you the TRUE answer!

Many fleets are already profiting by this modern "Engineered Filtration" tool. It is so important to economical fleet maintenance that every fleet should have a WIX Dirtector in the hands of every mechanic checking oil and filters!

Contact your nearby Jobber—or write us—today, for full Dirtector information . . . and ask about our WIX-PAX plan, too! Get your first quality, high performance WIX Cartridges—this low cost WIX-PAX way . . . direct from the factory or Pacific Coast warehouse, in any assortment you need—prepaid shipments—in lots of 100 lbs. or more. Get the WIX-PAX facts, they'll make dollars and sense to you!

wix

OIL FILTERS • CARTRIDGES

WIX ACCESSORIES CORP. GASTONIA, N. C.

CANADIAN FACTORY: WIX ACCESSORIES CORP. LTD., 11 Wabash Ave., Toronto 3, Ont.

the Sensational

RED BLOCK

FOR HEAVY DUTY TRUCKS

NOW →

WORLD BESTOS "U" Combination Sets for Buses

Combines high friction, non-fading characteristics of new GREEN BLOCK with long wearing qualities of World Bestos "D" Blocks. GUARANTEED NOISE PROOF! Gives smoother and more dependable brake action with less driver fatigue. Unaffected by heat or water . . . will not fade . . . will not score drums! Eliminates glazing and heat checking . . . reduces brake system maintenance . . . extends time between brake relines.

WORLD BESTOS LINE COVERS EVERY BUS BRAKE NEED

BUS BLOCKS

½" thickness and over. Available in Medium, Medium High or Medium Low frictions . . . and in combinations to meet heavy-duty conditions quietly and with a minimum of fade and drum wear.

BUS GROUP BLOCKS

Undrilled, heavy-duty segments in a variety of sizes that will service hundreds of different bus models back to 1933. High or Medium friction . . . completely dependable performance guaranteed.

GREEN BLOCK

Guaranteed NOISE PROOF!

LONG WEARING, NON-FADING "U" COMBINATION Bus Blocks

World Bestos, producer of the sensational RED BLOCK that solved the heavy duty trucker's biggest brake problems . . . Brake Fade, Scored and Heat Checked Drums . . . *now guarantees an end to BRAKE SQUEAL*, the Number One *bus* brake problem!

World Bestos' revolutionary GREEN BLOCK in the "U" Combination is Guaranteed NOISE PROOF! Green Block can't fade, won't squeal, and gives you *more miles of safe, dependable stops at lower cost per mile!*

The same World Bestos engineering skill and quality that made Red Block's amazing record possible is your assurance of GREEN BLOCK'S unsurpassed performance. Only World Bestos GREEN BLOCK in the "U" Combination solves your biggest bus brake problems!

See your Jobber right away for full details . . . or write direct to Bus Brake Division, WORLD BESTOS, New Castle, Indiana.

GET IT FROM YOUR JOBBER

WB

WORLD BESTOS

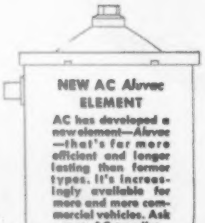
NEW CASTLE INDIANA

AC

OIL FILTERS

Protection

You Get It with AC Oil Filter Elements . . . and It Costs You No More!


NEW AC Aluvac ELEMENT
AC has developed a new element—Aluvac—that's far more efficient and longer lasting than former types. It's increasingly available for more and more commercial vehicles. Ask your AC supplier about it.
AC SPARK PLUGS
AC FUEL PUMPS

There's a reason why many of the country's largest truck and bus operators prefer AC Oil Filter Elements. They've found that AC's give them the *plus protection* of *plus quality* construction at very little difference in price.

AC Oil Filter Elements are designed by engineers of recognized, outstanding experience in every phase of oil filtration. They are built to the highest standards of uniformity and precision—tested and proved by the unsurpassed facilities of the world's largest automotive organization.

You can be sure of keeping dirt, dust, grit and moisture out of your fleet's engine oil when you use AC Elements. Get the *plus protection* their *plus quality* assures.

AC SPARK PLUG DIVISION GENERAL MOTORS CORPORATION

We make our own steel

(Another reason why TIMKEN bearings are first choice with bus manufacturers)

The photo at left shows a 100-ton heat of Timken® steel being tapped from the world's largest electric furnace, in operation at the Timken Company. This heat will have to pass approximately 70 chemical tests to assure correct chemical composition, hardenability, grain size, physical and mechanical properties.

Because the Timken Company is the only bearing manufacturer in America that makes its own steel, it is the only company that can rigidly control quality at every step in bearing manufacture—from the melt shop to final bearing inspection. And Timken bearings are the only bearings that give you *all* these advantages: (1) advanced design; (2) precision manufacture; (3) rigid quality control; (4) special analysis steels.

That's why Timken bearings are first choice with leading bus manufacturers. Take a tip from them. When you install a tapered roller bearing, always make sure it has the trade-mark "Timken". The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

SINCE THEY'RE BEST WHEN THE BUS IS NEW ...THEY'RE BEST FOR REPLACEMENT, TOO!

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

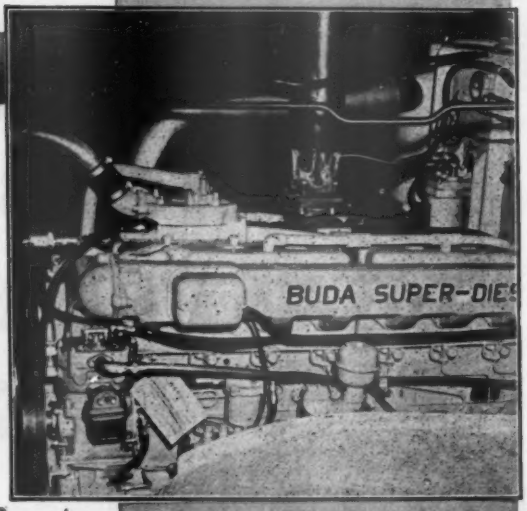
TAPERED ROLLER BEARINGS

NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◐ AND THRUST →◐← LOADS OR ANY COMBINATION ✳

FLEXIBLE HOSE LINES

WITH DETACHABLE, REUSABLE FITTINGS

Always first
ON HEAVY MOBILE EQUIPMENT



This engine is plumbed with Aeroquip Flexible Hose Assemblies. The detachable, reusable fittings make it possible to service mobile equipment quickly on the road or in the shop. A small inventory of Aeroquip Hose and Fittings reduces downtime and helps maintain schedules.

Save time, save money and reduce inventory by putting the "Aeroquip Idea" to work for you. With Aeroquip you make your own flexible hose assemblies by cutting bulk hose to desired lengths and attaching Aeroquip Reusable Fittings. Assembly can be accomplished quickly and easily right on the job. No special tools are required. No training is needed. Aeroquip high quality Flexible Hose Lines improve performance and reduce maintenance. They eliminate leaks due to vibration and operate dependably at extremely high or low temperatures. They are widely used for hydraulic fluid, water, air, lubricating oils, gas and Diesel fuels and many other fluids.

Always first

B.D. Check into this money saving idea—Joe

AEROQUIP CORPORATION

JACKSON, MICHIGAN

SALES OFFICES: BURBANK, CALIF. • DAYTON, OHIO • FORT WORTH, TEXAS • HAGERSTOWN, MD. • HIGH POINT, N. C. • MIAMI SPRINGS, FLA. • MINNEAPOLIS, MINN. • PORTLAND, ORE. • WICHITA, KAN. • TORONTO, CANADA

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

Illustrated above is "Ionia" Drivers' Seat No. 84 Series. Finger tip control for easy adjustment. Test samples available for inspection and driver approval.

BACK OF *Ionia* SEATING...

"Ionia" Seat No. 100 "Ordnance Series" Intercity High Headrest non-recliner. 420 sets to be installed in Ordnance Busses.

After all, it's the manufacturing facilities behind the product –any product–which counts. The worth of manufactured goods in terms of quality and dependability is simply the reflection of the skills which went into their making. Back of Ionia seating are the tremendous facilities of Ionia Manufacturing Company, a quarter-of-a-century of seating experience, the accumulation of production skills which only a company of Ionia's size could muster and organize, and endless searching for improvement. Ionia is constantly alerted to your seating needs, and stands ready to serve you!

IONIA MFG. CO. *Automotive Seating Division* **IONIA, MICH.**

Marmon-Herrington Trolley Coaches

break all records for sales and production

For five consecutive years Marmon-Herrington has made transit history—has broken all existing records for production and delivery of trolley coaches during any similar period.

Nor was this record accidentally achieved. From the day the first Marmon-Herrington was introduced, in 1946, it was apparent that this was far more than just another trolley coach. Here was a vehicle brilliantly conceived, with aluminum and steel alloys ingeniously combined to materially lighten weight and, at the same time, substantially increase structural strength.

This unique design not only resulted in lower operating costs, faster schedules and increased earnings—it made practical trolley coaches of larger capacity than ever before . . . as witness the world's first 48-passenger trolley coach, introduced by Marmon-Herrington in 1948—and now, in 1951, the even more sensational 50-passenger *Mainliner*.

• • • Visit Marmon-Herrington Headquarters at the ATA Convention — get first-hand information on these popular, profit-making transit vehicles

Marmon-Herrington Motor Coaches Win Nation-Wide Acceptance

A product has to be good—awfully good—to win national acceptance in its very first year. Yet that's the history of Marmon-Herrington Motor Coaches.

This universal approval confirms our belief that, dollar for dollar, Marmon-Herringtons are the world's finest, most beautiful 27-35 passenger motor coaches. Built to famous Marmon-Herrington quality standards, they are *right*, through and through—from strong, husky frame to solid steel and aluminum alloy body.

Here are coaches that are *styled right* for maximum rider attraction—and *sized right* for the utmost in passenger comfort and convenience, with wide doors and aisles and deep-cushioned seats.

Marmon-Herringtons are *powered right*, too. The compact 6-cylinder engine is designed specifically for transit service and adapted to either gasoline or propane operation. Precision construction throughout assures long life and dependable operation.

Equally important, Marmon-Herrington Motor Coaches are *priced right*. Low first cost enables you to put more vehicles on more routes—lets you run shorter headways and give the kind of fast service that attracts more riders.

sales and service across the nation

National Dealer Organization

New England Marmon-Herrington Coaches, Inc.
70 New Cross Street • Phone: Somerset 6-5300 • Somerville 45, Mass.

Maxford, Inc.
454 Main Street • Phone: Fort Lee 8-4940—Fort Lee, New Jersey

Capital Marmon-Herrington Coaches, Inc.
691 Main Avenue, S. W. • Phone: National 7125 • Washington 4, D. C.

Central States Marmon-Herrington Sales
3688 Lee Road • Phone: Skyline 1-6311 • Cleveland 20, Ohio

Great Lakes Marmon-Herrington Coach Co.
14601 Michigan Avenue • Phone: Luzon 2-7500 • Dearborn, Michigan

Northwest Marmon-Herrington Coaches, Inc.
1538 West National • Phone: Evergreen 4-6200 • Milwaukee 4, Wisconsin

Midwest Marmon-Herrington Coaches, Inc.
6185 Delmar Blvd. • Phone: Parkview 8685 • St. Louis 12, Missouri

Southeast Marmon-Herrington Coaches, Inc.
102 East 14th St. • Phone: 3-8605 • Jacksonville 6, Florida

Southwest Marmon-Herrington Coaches, Inc.
4147 Commerce Street • Phone: Tonison 3117 • Dallas 1, Texas

Pacific Marmon-Herrington Coach Sales
2500 East 12th St.—Phone: Trinity 4025 • Los Angeles 21, California

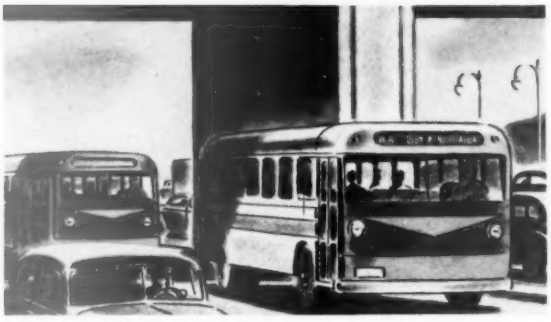
Cole Commercial Company, Inc.
3423 Fourth Ave., South • Phone: Seneca 1412 • Seattle 4, Washington

Made in Canada by
Welles Corporation, Ltd., Windsor

Transit Equipment Division
MARMON-HERRINGTON COMPANY, INC. • INDIANAPOLIS 7, INDIANA

On highways and byways from coast to coast

Buses depend on FRAM



BUS FLEET INCREASES ENGINE LIFE 16%!
"After using Fram Filters, together with the Fram Lubri-Graf, many of our engines were in the cleanest condition inside . . . consequently our engine life increase of 16% is no great surprise."—Bus Company, Anniston, Ala.

• • •

FRAM IS WORTH ITS WEIGHT IN GOLD!
"We installed a Fram Positive Crankcase Ventilator on a Ford bus which runs 18 hours a day, 10 months between engine changes. When we tore the engine down, it was clean as new inside . . . no sign of sludge anywhere. The Fram Ventilator is worth its weight in gold!"—Bus Fleet, Owosso, Mich.

• • •

TRANSIT COMPANY BENEFITS FROM FRAM!
"Our Southern Coach buses are equipped with Fram Oil & Motor Cleaners. Also have Fram equipment on our taxi fleet. Results have been fine!"—Transit Company, Wichita Falls, Texas.

• • •

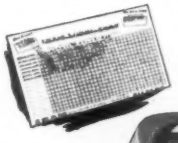
FRAM COMPLETE ENGINE PROTECTION SAVES CABS!
"Fram Complete Engine Protection helped me establish a real preventive maintenance program for my taxi fleet. I recommend Fram without qualification to any fleet operator who is interested in maintaining his equipment at highest operating efficiency at lowest cost."—Taxicab Company, Sheboygan, Wis.

FRAM guards engines... lengthens service... cuts repairs...saves money...

Bus Operators everywhere are sold on the time-and-money-saving advantages of Fram-protected engines! Only Fram offers you Complete Engine Protection . . . Oil & Motor Cleaners, Carburetor Air Filters, Fuel Filters and Positive Crankcase Ventilators — that completely protect car, truck and bus engines against harmful abrasives and internally-formed contaminants. And the new Fram Radiator & Water Cleaner keeps cooling systems *clean*—reduces danger of overheating!

Unconditionally guaranteed! Test any Fram Filter on your fleet engines without risking a cent. Money back if not completely satisfied. See your Fram Distributor today!

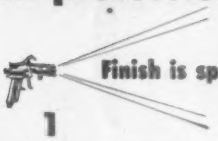
Send for FREE Lubri-Graf



Provides instant visual check on condition of oil, filter cartridge, and engine. Indicates cartridge changes only when needed. Saves money. Write to FRAM CORPORATION, Providence 16, R.I. *In Canada:* J.C. Adams Co., Ltd., Toronto, Ontario.

DEVILBISS
TIPS ON A BEAUTIFUL FINISH
Paint shops of the great majority of vehicle manufacturers are equipped with DeVilbiss Spray Guns, Exhaust Systems, Air Compressors and Hose. For years, DeVilbiss engineers have worked with them to develop better finishes. By duplicating factory methods and equipment, you can produce more beautiful, more durable paint jobs on your own vehicles. May we help you?

In professional painting TWO FACTS STAND OUT!



Finish is sprayed on

1

A brand-new bus? No . . . but we'll agree that it looks like one! This gleaming coach has just received a DeVilbiss beauty treatment—a sprayed-on finish that's just as durable as it is attractive.

You can get good results every time with a DeVilbiss Complete Paint Shop. DeVilbiss Spray Booths improve quality through well-planned illumination, clean air intake, and an exhaust system that removes fumes and overspray rapidly. All of these features improve working conditions, increase volume and cut costs.

DEVILBISS IS FIRST!

2

You can benefit from DeVilbiss experience and quality products, too. It is a significant fact that leading bus, trolley coach, motor truck and motorcar manufacturers all use DeVilbiss. *And*, 18 out of 21 Maintenance Award winners last year used DeVilbiss equipment exclusively!

Ask your jobber or write direct to the factory for complete data. An investment in DeVilbiss Equipment will pay big dividends!

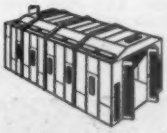
THE DEVILBISS COMPANY
Toledo, Ohio

Windsor, Ontario • London, England
Santa Clara, Calif.
Branch Offices in Principal Cities

Air Compressors

Hose and Connections

Spray Guns



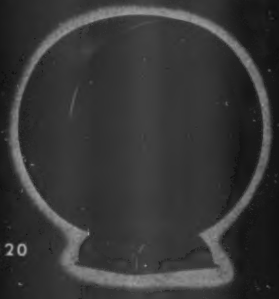
Spray Booths

FOR BETTER SERVICE, BUY
DEVILBISS

CLASS "A"

DIETZ

SELF-CANCELLING DIRECTION SIGNALS



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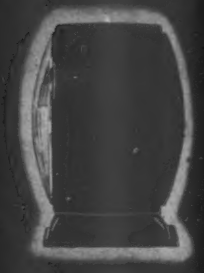

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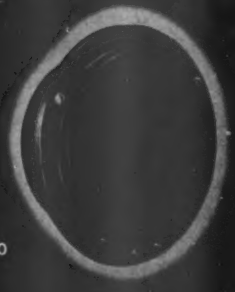


130

for MAXIMUM HIGHWAY SAFETY at MINIMUM OPERATING EXPENSE

For Safety's sake . . . put the DIETZ new Direction Signal Sets to work on your payload units. Class "A" Type 1 DIETZ Signal Lights (shown at right) are:

No. 120 SINGLE FACE • No. 125 DOUBLE FACE
No. 130 FLUSH MOUNTING

All Lights with either vivid RED or AMBER lenses

The DIETZ Self-Cancelling Direction Signal Switch—No. 111-C—illustrated above—operates at the flick of a finger, then returns to neutral—*Automatically*. Complete with *Flasher* for unmistakable *Signalling*. Easily mounted on all 1½" to 2" diameter steering posts. Non-cancelling type Switches also available. All DIETZ Lights and Switches Tested by Electrical Testing Laboratories. Available from your Jobber now! R. E. DIETZ COMPANY, 225 WILKINSON STREET, SYRACUSE 1, NEW YORK.

120-A 125-A 130-A

CLASS "A" TYPE 2 SIGNAL LIGHTS WITH DIRECTION ARROWS

Outstanding Class "A" Type 2 Direction Signal Lights. Bright AMBER arrows on black backgrounds. Characteristically rugged DIETZ construction.

DIETZ Switches and Lights are available individually or in many popular set combinations. Perfect for new installation and replacement. Class "B" DIETZ Direction Signals for passenger cars and commercial vehicles under 80" wide also available.

OVER A CENTURY OF LIGHTING DIETZ

In a BRAKE DRUM

it's the BASIC METAL...

it's the ENGINEERING...

that count!

REYCO

BRAKE DRUMS

are basically better---

combining nationally-known
REYCO METAL with
REYCO'S FAMOUS ENGINEERING!

THERE'S A REYCO DISTRIBUTOR NEAR YOU!

REYNOLDS MANUFACTURING CO.

SPRINGFIELD, MISSOURI

B.F.Goodrich

Scuffs, kicks, jumps— Koroseal stands them for years

IF YOUR company is a typical bus operator, Koroseal upholstery has saved you hundreds of dollars. It can save you still more. No newer kind of material yet equals it.

In *seven years* of use not one single Koroseal bus seat covering has ever worn out. A buyer for one large seat manufacturer says he has never had a complaint in seven years.

Koroseal stands "feet-on-the-seat" scuffing and wear. It's easy to keep clean because dirt is so easily wiped off. It stays new looking years after ordinary materials would be scratched, worn, torn or old looking.

Stands nearly everything — Koroseal upholstery resists grease, oils, most stains, acids and common chemicals. It even resists flame — always goes out when flame is removed. Heavier grades pass all flame-resistance specifications of federal boards, army, navy and air force. Flame resistance is *not an extra* treatment; there is no extra cost; it is permanent, will not leach out. In lighter grades the Koroseal coating itself is flame-resisting.

People like to ride on it — Koroseal upholstery won't get tacky and stick to clothing in hot weather. People like it because it always seems clean and new looking.

Save two ways — Koroseal is easy to work with, saves upholsterers' time. It cuts, trims and fits with little waste. This is a double saving when combined with Koroseal's long life. Everyone benefits — seat manufacturer, bus manufacturer, bus operator — when Koroseal upholstery is specified. Koroseal is made by The B. F. Goodrich Co., Marietta, O.

Trade Mark—Reg. U. S. Pat. Off.

Koroseal
BUS UPHOLSTERY BY
B.F.Goodrich

NATIONAL

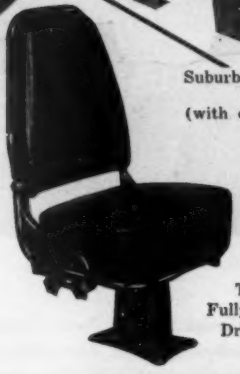
UT-250-M1
City Service-Offset

UT-227-B
City Service-Standard

PT-130
Intercity-
Non-reclining

PT-130-E
Suburban and Sight Seeing
Non Reclining
(with or without headrest)

TR-150
Deluxe Intercity
Recliner



TD-750-E
Fully Adjustable
Driver's Seat

FULL LINE FULL COMFORT FULL QUALITY

Standard Equipment on ACF-BRILL • MACK • BECK
Optional Equipment on AEROCOACH *and* OTHERS

National **SEATING COMPANY**

MANSFIELD • OHIO (*Formerly Ohio Division of Art Rattan Works, Inc.*)

Model 02, city type Transit Bus is profit-proved in both large and small urban transit systems. Attractive (to build patronage), rugged (to cut maintenance costs), maneuverable (for less running time), it also is low in first cost and operating cost. Seats 32 passengers. • Ask for new Bulletin 511.

Transit CCM Buses, Inc.

Model 05, suburban type Transit Bus parallels the city type in ability to perform profitably in the service for which it is built. It is low in first cost and operating cost, attractive, comfortable. Rugged construction keeps maintenance down. Seats 35 passengers. • Ask for new Bulletin 511.

Transit Buses, Inc.

Subsidiary of

CHECKER CAB MANUFACTURING CORP.

Factory
KALAMAZOO, MICH.

Sales Offices
SCHAEFER RD. at ELMIRA
DETROIT 27, MICH.

USE

Grey-Rock

BALANCED BRAKE BLOCKS

VEE-LOK® CLUTCH FACINGS

to balance out bumps in maintenance costs

RM Grey-Rock

GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings
Fan Belts • Radiator Hose • Packings • Mechanical Rubber Products • Rubber Covered Equipment
Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

FINEST LUBRICATION FOR **ANY KIND** OF FLEET OPERATION

Do you have a lot of *stop-and-go* angles in your fleet operation? Maybe it's not dog chasing, but if you operate a fleet that's on a heavy "call-for-and-deliver" schedule, then you'll do well to consider Quaker State HD Oil. For here's the finest heavy-duty oil, we believe, produced anywhere in the world for short-haul or long-haul fleet operations.

The combination of the unparalleled qualities of 100% pure Pennsylvania grade crude oil, plus skillful refining and top-choice chemical detergents, can substantially lower your overall cost-per-mile.

Quaker State HD Oil keeps its body, protects fully, cushions every working surface and prevents the formation of sludge, gum and varnish. It actually cleans as it lubricates. Use it!

QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PA.

PROPANE TWIN COACHES ARE MARKING NEW MILESTONES IN AMERICA'S "100 YEARS OF TRANSIT PROGRESS"

One of Chicago's 500 Propane Twins

This nation's century of transit progress has been marked by constant improvements in transit vehicles.

To this, Twin Coach has been privileged to make several important contributions. Among these were the Fageol Safety Coach (1922), the first modern type bus (with underfloor engine) of 1927, the 58-passenger Super Twin, the Army-type "Convertible"—and today's Propane Twin Coaches.

More than 1350 of the latter are now in service (or on order) on 30 properties.

In this advertisement, we are listing a few of these, with comments from operating executives.

We believe that Propane Twins merit careful investigation and testing by every progressive transit operator. Demonstrations will be arranged at your convenience.

F. J. Fageol

A-4376

FAGEOL Twin Coach KENT-OHIO

TWIN COACH COMPANY
KENT, OHIO

. . . PROPANE TWINS ON LEADING PROPERTIES

FAGEOL
Twin Coach
KENT · OHIO

ARE IN SERVICE THROUGHOUT THE COUNTRY

Belleville - St. Louis Coach Company

31 Public Square
Belleville, Illinois

Our experience with Propane buses has been most gratifying. Of the seven in our fleet, one has operated 83,000 miles in eleven months, with about half the trouble and care required on gasoline powered buses with similar mileage. Besides they are cleaner, faster and more economical. Our savings in fuel costs alone, on these seven buses, is $30.00 per day. Based on our experience, we expect a minimum engine life of 200,000 miles.

President

KANSAS CITY PUBLIC SERVICE COMPANY

320 Delaware Street
Kansas City 12, Missouri

The 157 Twin Coaches that will be operating on Propane by October 1st will effect an annual saving in fuel amounting to $86,000.00.

Vice President in Charge of Shops and Equipment

Omaha & Council Bluffs Street Railway Co.

OMAHA 2, NEBRASKA

Maintenance costs on the Fageol Twin Coach Propane engine prophesy far longer engine life than here-to-fore experienced by transit operators.

Vice President and General Manager

The Wichita Transportation Corporation

EMERGENCY TRANSPORTATION, INC.
205-207-209 NORTH BROADWAY · WICHITA 2, KANSAS
TRANSPORTATION BUILDING · PHONE 3-4616

After a year's operation and 75,000 miles — if this engine is a criterion, and I believe it is, of what we can expect from Propane, engine life of 200,000 miles or better will not be uncommon. The statement of 50% longer engine life will be substantiated. In fact, it might approach 100%.

J. E. Ebinger

SAN ANTONIO TRANSIT COMPANY

We have been able to double our oil draining interval. From examination of a limited number of engines, we believe our overhaul mileage will be materially increased.

Superintendent of Equipment

FORT WAYNE TRANSIT, INC.

320 EAST JEFFERSON STREET
FORT WAYNE 2, INDIANA

Early indications of savings in fuel and oil costs, elimination of obnoxious odors and better operating characteristics on the street have all been borne out through later experience. We believe that even greater advantages will accrue to us in the future with Propane.

Donald H. Walker
President

ASBURY RAPID TRANSIT SYSTEM

4908 SOUTH ALAMEDA STREET
LOS ANGELES, CALIF.

The purchase of ten additional Twins and the conversion of seventeen others, now in our fleet, to Propane power serves to amplify the feeling of confidence we have toward the Twin Coach Company.

Vice President and General Manager

CHICAGO TRANSIT AUTHORITY

175 WEST JACKSON BOULEVARD, CHICAGO 90, ILLINOIS

Address: Merin P.O. BOX 710
WALTER J. McCARTER
General Manager
Telephone: HARRISON 7-4100

Chicago local transit rider reaction to the smooth performance, excellent riding qualities, and odorless operation of its large fleet of Propane buses has been especially gratifying.

General Manager

WINNIPEG ELECTRIC COMPANY

PHONE 9040

WINNIPEG CANADA

The drivers like them very much. We have not had a complaint from passengers or drivers since the conversion was made.

Manager of Transportation

The City of Edmonton

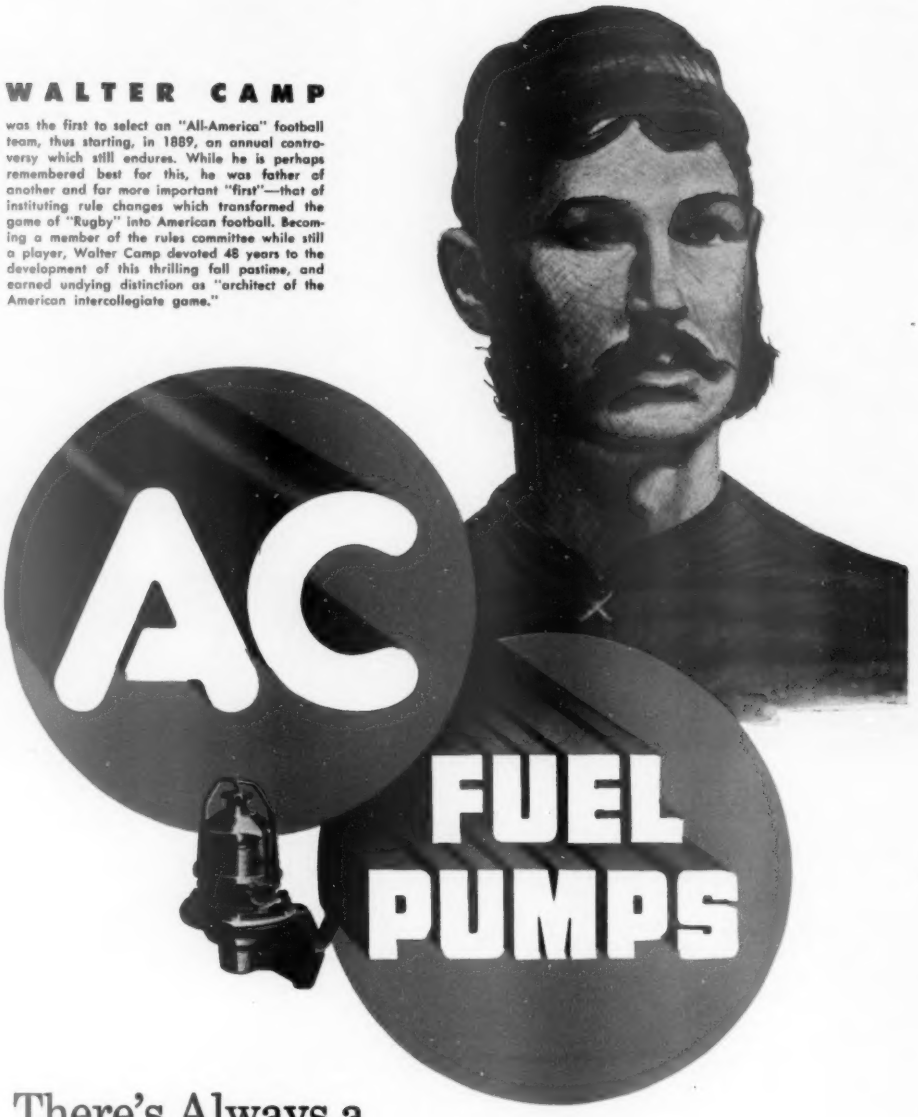
EDMONTON TRANSIT SYSTEM

Our experience shows an initial saving of one cent per mile in fuel cost for Propane over gasoline. Oil tests have not been completed, but consumption of motor oil is approximately half that of gasoline coaches.

Superintendent

WALTER CAMP

was the first to select an "All-America" football team, thus starting, in 1889, an annual controversy which still endures. While he is perhaps remembered best for this, he was father of another and far more important "first"—that of instituting rule changes which transformed the game of "Rugby" into American football. Becoming a member of the rules committee while still a player, Walter Camp devoted 48 years to the development of this thrilling fall pastime, and earned undying distinction as "architect of the American intercollegiate game."



There's Always a

FIRST...

AC originated the fuel pump, 24 years ago. It soon became "All-America," supplanting other types of fuel supply systems.

More than 100,000,000 AC Fuel Pumps have been built.

More than 40,000,000 AC Fuel Pumps are in daily use.

The AC Fuel Pump is still "All-America." More than 90% of the gasoline-powered vehicles now in service were factory-equipped with AC's — the quality fuel pumps.

GM

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION

America's FIRST *and* FINEST *Fuel Pumps*

Snap-on Tools and Snap-on's on-the-job Service rate high in our shop! They help a man make time on tough jobs. That makes friends and profits for the shop, and makes money for the mechanics.
Lou Jalovec
Service Mgr., Jalovec Motors
5283 Superior Ave., Cleveland, Ohio

Snap-on* Tools

"help a man make time—make friends—make money"

In plain words, Mr. Jalovec tells you why thousands of shops—tens of thousands of mechanics—look to the "Snap-on Man" for money-making tools. In actual shop experiences (case histories on request) mechanics report boosting income 20 to 40 per cent after replacing ordinary tools with Snap-ons. They're true *professional* tools—designed for speed, built for tough endurance. More than 4,000 to choose from. Brought right to the bench so you can pick and try them on the job. It's been "the time-saving way to buy time-saving tools" for more than 30 years. If you haven't one of Snap-on's 104-page FREE Catalogs, write—

SNAP-ON TOOLS CORPORATION
8040-J 28th Avenue
Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation

Raybestos OFFERS FLEETS

The Answers to Engineering Service Needs and the Promise of Product Performance

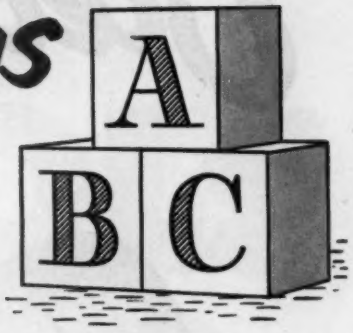
Raybestos provides a complete fleet engineering service, with valuable technical data on brake block installation; practical information to give your fleet more efficient brake block results; specific fleet recommendations based on careful surveys. Write us for this complete Raybestos Fleet Engineering Service.

In fleet operation, you can rely on Raybestos for less down-time, greater safety, quieter operation, longer life, increased economy. Insist on Raybestos Brake Blocks—factory-packaged with the right combination of materials for every installation—as well as Raybestos Heavy-Duty Clutch Facings. They are *proving ground tested.*

Raybestos

RM

LOWER COSTS ARE SIMPLE AS



You are invited to join the long list of fleet operators who have found that the United Motors distributor can help lower running costs and repair costs. Here are three of the many ways in which he can help you cut costs:

UNITED SERVICE MOTORS

- DELCO Batteries
- AC Gauges, Speedometers and Rebuilt Fuel Pumps
- SAGINAW Jacks
- MORAINE Engine Bearings
- DELCO Radio Parts
- ROCHESTER Cigar Lighters
- HYATT Roller Bearings
- INLITE Brake Lining
- HARRISON Heaters
- GUIDE Lamps
- DELCO Clocks
- NEW DEPARTURE Ball Bearings
- DELCO Shock Absorbers
- MORAINE Gasoline Filters
- HARRISON Thermostats
- DELCO-REMY Starting, Lighting and Ignition
- KLAXON Horns
- HARRISON Radiators
- ROCHESTER Carburetors
- DELCO Hydraulic Brakes

A — **Leading names in the original-equipment parts industry.** These are the identical parts used on a big percentage of the nation's trucks, buses and cars. Their established quality means better performance, longer life and lower cost per mile.

B — **Parts for old as well as new models.** There are twenty United Motors warehouses and hundreds of inventories strategically located across the nation. These insure delivery of any part in the shortest possible time.

C — **Time-saving service.** Because your United Motors distributor is in many cases a single source for United Motors lines, he can save you hours of time, no matter how many vehicles you operate.

Other money-saving, time-saving services—such as the latest accurate information on parts and service—are yours automatically when dealing with your United Motors distributor. Why don't you, too, cash in on his facilities and his experience?

UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION
GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

Electric...and now

IMP

for automotive

3 **ELECTRIC** sizes
up to 1¼"
capacity

Ingersoll-Rand Impactools easily give 25% more flat rate hours per day. This means that a shop owner by investing only in Impactools can profit by . . . increased customer-labor sales . . . increased parts sales . . . faster service . . . and higher shop morale. It also means increased earnings for flat rate mechanics.

Use only One Multi-purpose I-R Impactool for NUT RUNNING . . . DRILLING . . . REAMING .

AIR (the *only* complete line)

ACTOOLS

5 AIR SIZES FOR ALL AUTOMOTIVE REPAIR WORK

These powerful, light-weight AIR tools offer the same outstanding performance advantages found in Ingersoll-Rand electric Impactools . . . the standard in the automotive service industry.

5 AIR sizes up to 1½" capacity

Ingersoll-Rand ORIGINATOR OF IMPACTOOLS—air and electric

681-14 11 BROADWAY, NEW YORK 4, N. Y.

TAPPING . . . SCREW DRIVING . . . HOLE SAWING . . . STUD DRIVING . . . EXTRACTING BROKEN STUDS . . . WIRE BRUSHING . . . WOOD BORING . . . MASONRY DRILLING

37 WEST BLVD.
Hafner

For Transit Progress...

Today... and Tomorrow

...Trolley Coaches are Basic!

The number of trolley coaches in service has more than doubled within the last five years.

The reason? Facts and figures . . . a showdown on costs, and public approval of this quiet, safe, smooth-riding means of transportation.

Passengers show their approval by increased number of fares on lines converted to trolley coaches. Operators like them. And their money-making advantages are appreciated by transit men "in the know".

Cities which have converted to trolley coaches, or added new lines, have made a definite contribution to transit progress in their communities. And they have found that, in both public service and profit structure, trolley coaches are basic.

In your modernization or expansion program, be sure to consider the suitability of trolley coaches. A Westinghouse Transportation Engineer will help you determine their application to your system. Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

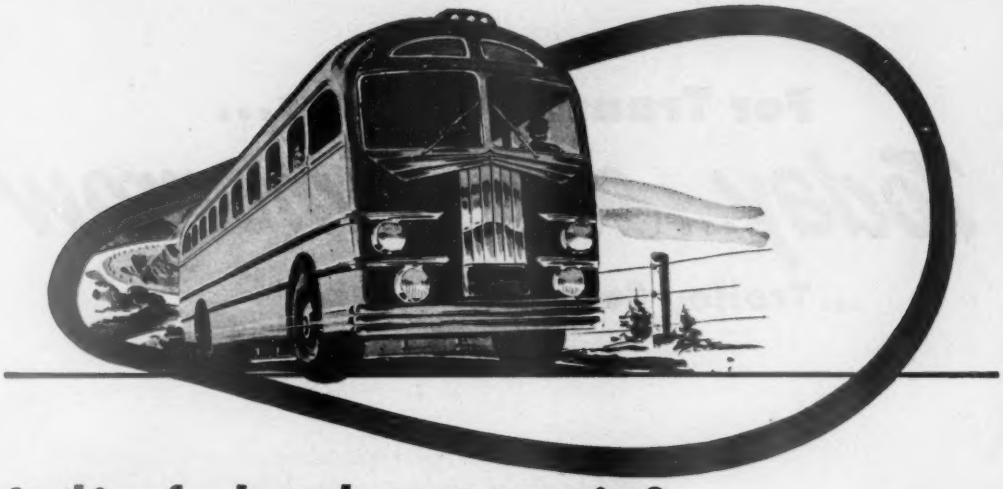
J-15164

WESTINGHOUSE SALUTES THE TRANSIT INDUSTRY ON 100 YEARS OF TRANSIT PROGRESS

YOU CAN BE SURE ... IF IT'S

Westinghouse

ELECTRIC TRANSIT EQUIPMENT
AND OVERHEAD LINE MATERIAL



Looking for long, low-cost service?

Then try Goodyear type H heavy-duty Fan Belts

for bus and truck operations

STRONGER—
built with single-layer, high-tensile, low-stretch rayon cords to carry the load.

RESIST SHOCK—
because rayon cords combine the strength and resilience needed to "soak up" shock loads.

LONGER WEAR—
maximum sidewall contact with pulley means far more efficient power transmission.

MAXIMUM FLEXIBILITY—
cover is lapped on bottom only to give maximum flexibility to other three sides.

OIL-, HEAT- and GREASE-RESISTANT
to meet the severe demands of bus and truck service.

You get longer service—and at lower cost in the long run—when you equip your buses and trucks with Goodyear Type H Heavy-Duty Fan Belts. That's because—like all other Goodyear products—they are job-designed to out-perform all others on specific assignments, then built to the world's highest standard of quality.

Ask your jobber, or write Goodyear, Akron 16, Ohio.

GOODYEAR

THE GREATEST NAME IN RUBBER

CLARK

Here's a quiet trouble-free worker—the Clark Transmission. It lives the life of the vehicle—which is exactly what it was built to do.

A sound idea!

Work with Clark

SEE NEXT PAGE FOR MORE ABOUT CLARK PRODUCTS

CLARK EQUIPMENT COMPANY, Buchanan, Michigan

Other Plants: BATTLE CREEK, JACKSON, MICHIGAN

Simpler-Sturdier Faster-Safer

THE REDESIGNED CLARK PUL-PAC

A great money-saver since the day it was introduced, the PUL-PAC eliminates the conventional space-consuming pallet and handles unit loads assembled on low-cost carrier sheets. Today's redesigned PUL-PAC does that job more efficiently and more profitably. Simpler, sturdier, faster, safer, it reaches new heights as a money and manpower saver.

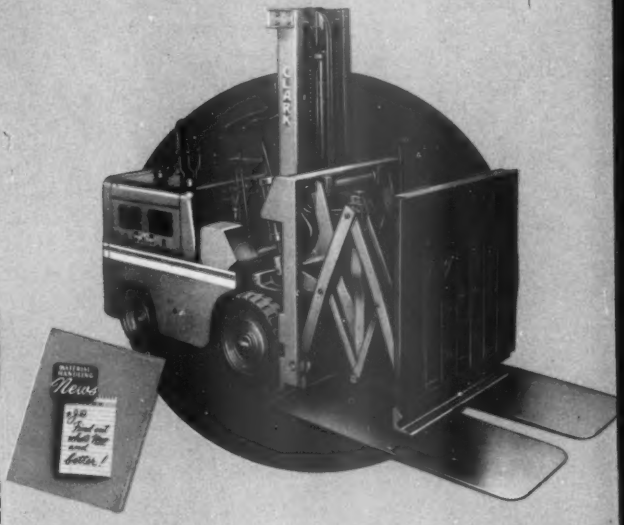
The PUL-PAC method might be the most efficient, the most economical for *your* operation. Check on it with your Clark Dealer—he's listed in the Yellow Pages of your telephone directory. Or send the coupon, attached to your business letterhead, for PUL-PAC literature.

Where it's applicable, it's unbeatable

A hydraulically-operated pantograph-type linkage extends and retracts the pusher-rack and gripper-jaw, with these important advantages:

- **shorter hydraulic stroke, more powerful piston**
- **elimination of bending forces to which old-type longer piston was subject**
- **increased operating speed**
- **all PUL-PAC mechanism *in front of uprights*—maximum visibility and safety.**

(Available for use on Clipper and Carloader models, gas- and electric-powered.)



CLARK ELECTRIC AND GAS POWERED **FORK TRUCKS**
AND POWERED HAND TRUCKS - INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 16, MICH.

Please send: ☐ PUL-PAC literature ☐ Condensed Catalog.

Name_____

Firm Name_____

Street_____

City_____ Zone____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

***PRODUCTS OF CLARK*—TRANSMISSIONS • FORK TRUCKS & TRACTORS • AXLE HOUSINGS • GEARS AND FORGINGS • RAILWAY CAR TRUCKS • ELECTRIC STEEL CASTINGS • AXLES • TRACTOR UNITS**

Cab company reduces overhauls and cuts oil consumption with Gulflube Motor Oil X.H.D.!

"Our cab fleet," says J. E. Fitzmartin, treasurer of Binghamton Taxicab Company, "had an epidemic of early engine overhauls due to plugged rings. Since we switched to GULFLUBE MOTOR OIL X.H.D. we have materially increased mileage between engine overhauls and get a 20% saving in oil consumption." Mr. Fitzmartin and his garage foreman, Robert Weingartner (second and third from left) are pictured talking to the Gulf Sales Engineer.

YOU CAN, TOO!

Even by using premium oils the Binghamton company found that long idling periods and city driving conditions caused excessive crankcase contamination and the resulting early engine overhauls.

In 9 months' operation with GULFLUBE MOTOR OIL X.H.D., the company has had no recurrence of former engine trouble. Inspection found oil rings, screens, valve chambers and pans clean and free of sludge deposits. Mileage between overhauls had been greatly increased.

Judged by engine performance results and all other standards of comparison, GULFLUBE X.H.D. could well be just the answer to your problems. See your Gulf Representative now about how GULFLUBE MOTOR OIL X.H.D. can cut maintenance costs—keep your fleet running better—*longer!*

Gulf Oil Corporation—Gulf Refining Company
719 Gulf Building, Pittsburgh 30, Pa.

Please send me, without obligation, a copy of your new pamphlet "Gulflube Motor Oil X.H.D."

Name_____

Company_____

Title_____

Address_____

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

Go Firestone all the Way

Mileage — that's the Yardstick that says

Firestone BUS TIRES

Save You Money

YOU'LL GET MORE OUT OF THIS BATTERY BECAUSE THERE'S MORE BUILT INTO IT...

The

Firestone

BUS-TYPE

BATTERY

GET BETTER PERFORMANCE UNDER ANY OPERATING CONDITION

With

Firestone

BRAKE BLOCKS

Cost per mile — that's the only sound way to figure bus tire costs. With Firestone Bus Tires, you can lower your cost per mile. Their treads are thicker, tougher, and longer-running. Their extra-strong, rayon cord bodies are protected from curb scuffing by extremely tough sidewalls. And the beads of Firestone Tires are chemically engineered to withstand the most intense brake heat.

Check with any operator who is using Firestone Bus Tires, and see the results he is getting. Then let one of our Service Representatives help YOU obtain these same money-saving advantages.

Today's modern buses require the kind of a battery that will stand up and give dependable service day in and day out. The Firestone Battery will do that — and more! Bar none, it's the biggest bundle of "bus energy" you'll find anywhere. What a difference there is in starting power, in daily dependability, in extra months of service. It's a difference you can measure in dollars and cents savings.

K-Z LIFT HANDLES
Save work and prevent accidents to battery.
THICKER, DENSER, HEAVIER PLATES
For extra months of extra service.
RUGGED, HARD RUBBER CASE to resist breakage, leakage and loss of fluid.
SPECIAL FIBERGLAS PLATE SEPARATORS to hold the "wallop" in the plates.

Firestone engineers have developed a complete range of frictions in brake blocks — frictions applied in varying combinations to meet even the most diversified and most severe operating conditions. If you have a fade problem, a wear problem, or a problem with heat-checked drums, we can help you with it. If you have no problem at all, but simply want more for your money, we can do something about that too!

FOR COMPLETE INFORMATION OR ASSISTANCE WITH YOUR TIRE, BATTERY OR BRAKE PROBLEMS

WRITE

THE FIRESTONE TIRE & RUBBER CO., AKRON, OHIO

trust Guide

HEAVY-DUTY TURN SIGNALS
FOR TRUCKS AND BUSES

No need to take chances. Not today. Not with dependable Guide heavy-duty turn signals available for your trucks or buses. You can't be sure of hand or arm signals, but the flashing amber arrows of Guide signals are unmistakable—day or night!

The Guide double-face unit (illustrated) is for front fender mounting . . . cautions traffic both before and behind. Single-face units, for either front or rear mounting, are also available. All have visors and lenses that brighten the signal and increase visibility.

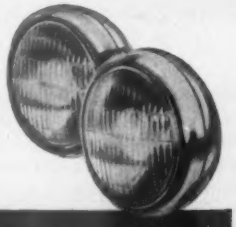
Trust Guide—for the finest in lighting and warning signal equipment. Guide lamps and signals are built to the highest standards. You can't buy better!

UNITED SERVICE MOTORS

GUIDE LAMP—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

GUIDE FOG LAMPS

America's "safety twins" . . . for *all* makes of trucks and buses. Packaged in pairs, complete with fused switch, wiring and interchangeable mounting for attachment to splash pan, bumper bracket or front fender. Guide Fog Lamps minimize driving hazards under adverse weather conditions . . . promote safety and efficiency.



Guide LAMP
Division of General Motors
Anderson, Indiana

"PHOTOGRAPH FROM DU BARRY BEAUTY PREPARATIONS BY RICHARD HUDNUT."

Fine Features...

make fine seating too . . . !

SEAT No. 1150

SEAT No. 3193

SEAT No. 87-49

SEAT No. 1526-78-1

S. KARPEN & BROS. *Transportation Seating Division*

INTERNATIONAL FURNITURE CO.

624 S. MICHIGAN AVE., CHICAGO...ONE PARK AVE., NEW YORK

George B. Cross Company Exclusive Sales Agents

KARPEN SEATING . . . POINT OF CONTACT BETWEEN THE COMPANY AND ITS PASSENGERS

IN THE SPOTLIGHT for

Outstanding Performance...

It's no mere chance that so many fleet owners prefer Delco heavy-duty batteries. Over the miles and years, Delco batteries have proved their ability to withstand the roughest, toughest kind of operating conditions. Delco batteries are rugged, dependable . . . built to meet high standards for starting power, capacity and all-around performance. Yes, it's smart to specify Delco batteries for all replacements. You profit in the long run.

UNITED SERVICE MOTORS

DELCO BATTERIES
A UNITED MOTORS LINE

DELCO Heavy-Duty BATTERIES

2 Unique Ramco Principles:

RECONDITIONED OR NEW CYLINDER
MODERATELY WORN CYLINDER
BADLY WORN CYLINDER
LIGHT ACTION
MODERATE ACTION
FULL ACTION
AUTOMATIC ADJUSTING ACTION
of unique Spiro-Seal ring
DOES JOB RIGHT FOR ALL 3!
DOUBLE-LIFE PRINCIPLE
First, Spiro-Seal utilizes its own tension to contact cylinder wall, without assistance of liner-ring. Highly graphitic, cast-iron oil ring cones combination into perfect wall contact.
Second, all four contact wall for long-life, double-life.
1st Period
2nd Period

2 important reasons why:

RAMCO 10 up CURBS WEAR!

It is a combination of distinctive principles like the two shown here that make Ramco 10-Up the truly all-purpose rings for every job, Re-Bore or Re-Ring. Principles like these make Ramco 10-Up Rings look different and perform differently from conventional rings.

Ramco 10-Up Rings are different in performance in that they control oil *primarily through stabilization* rather than pressure. That's why Ramco 10-Up Rings work with equal satisfaction in both new, straight wall cylinders or in worn, tapered cylinders. That's why they are truly all-purpose rings. The Double-Life Principle is one of many Ramco originations which CURB ENGINE WEAR.

RAMSEY CORPORATION

St. Louis, Missouri

RAMCO 10 up

BUS ENGINE PISTON RINGS

...FOR RE-RING OR RE-BORE!

Copyright 1951 Ramsey Corporation, St. Louis, Missouri

RS401BT

50 NEW PCC CARS built for Boston by Pullman-Standard

Alighting passengers are channeled efficiently through double doors, which are flanked by well-placed rails and protective stanchions to guard against missteps.

Looking forward in one of Boston's new PCC cars. Wide aisles relieve congestion, facilitate movement. Wide windows, safety-glassed, are sealed against opening—an innovation developed by Metropolitan Transit Authority and Pullman-Standard engineers. Fresh air is provided by three 23-inch axi-flow ceiling fans, each with a capacity of 3500 c.f.m.

Prize examples of the latest developments in transit equipment—that describes the fifty PCC cars recently completed at Pullman-Standard's Worcester plant for the Metropolitan Transit Authority of Boston.

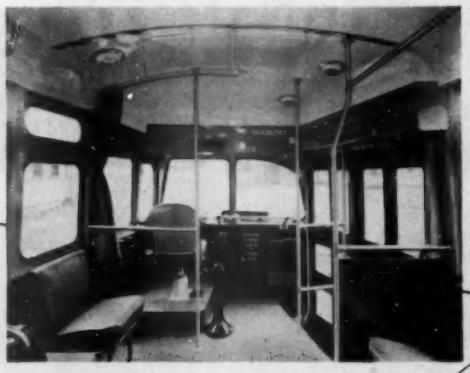
They are handsome cars, inside and out. Long "picture" windows are like those of the modern streamlined passenger-train cars that Pullman-Standard also builds. Coupled with "standee" windows, they provide good viewing for all patrons.

Scientifically planned seating arrangements give these cars wider aisles, for increased capacity and faster loading and alighting—yet overall width is only four inches greater. Length is 46 feet, 5 inches.

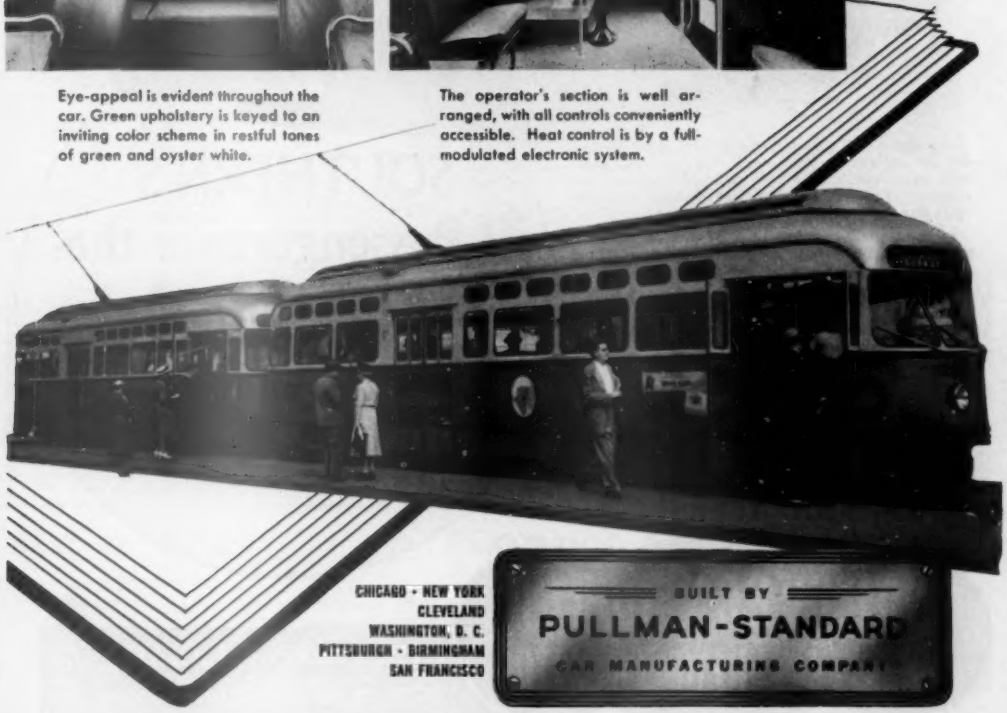
Riding qualities, too, have been notably improved. An advanced type of electrical control, modern coupling, and combination steel and rubber springs contribute to new smoothness and quietness in operation.

A special trip to Boston—just to see and ride in these new Pullman-Standard cars—is well worth taking by any interested transit operating executive or public official who wants to know the last word in PCC construction.

Eye-appeal is evident throughout the car. Green upholstery is keyed to an inviting color scheme in restful tones of green and oyster white.



The operator's section is well arranged, with all controls conveniently accessible. Heat control is by a full-modulated electronic system.



CHICAGO • NEW YORK
CLEVELAND
WASHINGTON, D. C.
PITTSBURGH • BIRMINGHAM
SAN FRANCISCO

BUILT BY
PULLMAN-STANDARD
CAR MANUFACTURING COMPANY

Can You Afford To Continue Paying TWICE The Price For An Inter-City Bus That Offers No More?

Southern's 37-passenger over-the-road job may be the answer to your needs for weekend peaks and suburban service — particularly when you consider that this bus is priced at half what you now pay for regular inter-city buses!

Look at the handsome lines of Southern's Suburban 37- or 41-passenger job. Then study these specifications:

525 cu. in. Waukesha engine . . . 4-speed Spicer transmission . . . Timken axles (bus type) . . . Heywood-Wakefield head-rest seats . . . 12-cu. ft. Bendix-Westinghouse air compressor . . . 10 Stud Budd wheels . . . 100-ampere Leece-Neville alternator . . . inside luggage racks and rear baggage compartment . . .

Can you afford to continue paying twice the price?

Investigate this Unusual

TWO FOR ONE BUS

"IT WILL KEEP UP"

SOUTHERN'S 37-Passenger over-the-Road Job Costs Only Half As Much Yet Does the Same Job!

SOUTHERN COACH MANUFACTURING CO., INC.

EVERGREEN, ALABAMA

GENERAL SALES OFFICES

113 N. 9th ST. BIRMINGHAM, ALA.

SOUTHERN

AVOID Heart Trouble in your DELUXE!

USE only Genuine DeLuxe Cartridges

Don't take the heart out of your DeLuxe Filter by using substitutes. The spring supported cotton wound cartridge is essential to DeLuxe principles of actual oil cleansing. No DeLuxe Filter can function properly without the patented Spring-and-Cone. No other cartridge has the patented Spring-and-Cone ... no other cartridge can give you full cleansing action in the DeLuxe Filter! Get the FREE "Key to Clean Lubrication" Booklet for all the facts. Write: DELUXE PRODUCTS CORP., 1407 Lake Street, La Porte, Indiana.

Just as the erratic beat of a bad heart interrupts blood flow, so a collapsed substitute cartridge interrupts oil flow.

at only 40 lbs. pressure unsupported cartridge COLLAPSES!

even at 75 lbs. pressure the DeLuxe Spring-and-Cone Cartridge shows NO COLLAPSE!

the SPRING is indispensable to prevent Cartridge Wadding.

the CONE is essential to Long Flow Filtration.

The patented DeLuxe Cone reverses the direction of oil flow to feed oil from bottom-to-top for FULL-DEPTH Filtration. All of the oil must be in contact with the filtering medium long enough to absorb the sludge-forming impurities. In addition, the Cone permits deposits of heavy impurities and water to drop to the sump where they will not clog and shorten cartridge life.

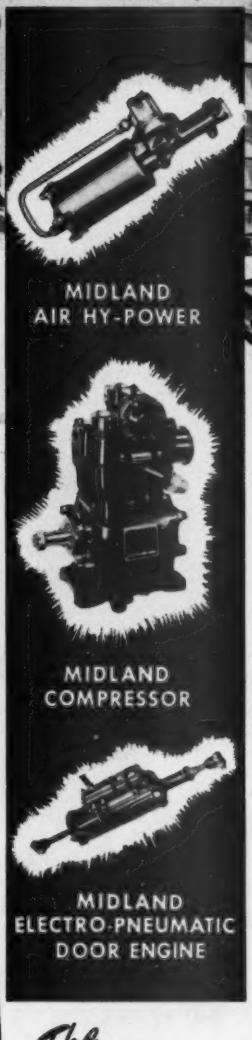
Be a Man Who Knows the Answers!

THE MEN WHO KNOW THE ANSWERS INSIST ON **DELUXE** Oil Filters

R-5450CC

BUS OPERATORS ARE MEN WHO KNOW! Year after year they vote DeLuxe the Number One Filter as indicated by the Winners of Bus Transportation Maintenance Awards. Of 21 winners in 1950, 17 were DeLuxe Users. Year after year it's the same story.

MIDLAND POWER BRAKES



MORE *Control..*

SAFE BRAKING AT ALL GRADES

Among the most trying road conditions are dangerously steep grades with hair-pin turns. On such roads — and under all other conditions — Midland Power Brakes are a dependable safeguard for bus and passengers.

Your assurance that Midland equipment is best for your buses lies in the fact that Midland Brakes have been proved in millions of miles of service.

MUCH *Safer..*

STOPS ANY LOAD SAFELY and QUICKLY

When an emergency arises, Midland Power Brakes bring even the largest and heaviest buses to a smooth stop almost instantly.

Midland Air Brakes with the husky Midland Compressor offer the ultimate in brake equipment—and dependable safety insurance.

Get the facts from a Midland Distributor near you, or write or phone us in Detroit.

MIDLAND
BUS DOOR CONTROLS
Electro-Pneumatic
WITH SAFETY DEVICES CONTROLLED ELECTRICALLY
Full Pneumatic
ANY COMBINATION and SEQUENCE

The **MIDLAND**
STEEL PRODUCTS COMPANY
6660 Mt. Elliott Ave. • Detroit 11, Mich.
Export Department: 38 Pearl Street, New York, N. Y.

Air and Vacuum POWER BRAKES

World's Largest Manufacturer of AUTOMOBILE and TRUCK FRAMES

Air and Electro-Pneumatic DOOR CONTROLS

Where radiator dependability is vital

Trucks, buses, farm equipment and military vehicles generally have low road speed in comparison with their engine temperatures. *Balanced cooling,* through proper radiator design, is essential to good engine performance.

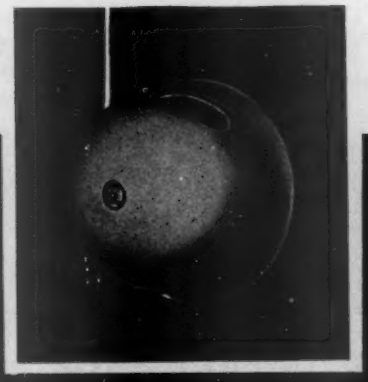
Keeping them cool has been a Long specialty since 1903. Our engineers give prompt and careful attention to special radiator requirements.

LONG MANUFACTURING DIVISION • Borg-Warner Corporation
DETROIT 12, MICH. and WINDSOR, ONT.

ENGINEERING B-W PRODUCTION

LONG

CLUTCHES • RADIATORS • TORQUE CONVERTERS
OIL



Earll Trolley Retrievers set the pace for improvements in modern Trolley Bus Equipment. Available with either aluminum or malleable iron shell and bracket.

Earll Retrievers have ALWAYS been noted for long life. Earll Units installed on street cars in 1916 —still in service! Earll "8 Units installed on Trolley Buses in 1935—still 100% satisfactory. These "Streamlined Eights" weigh less, act faster, are simpler construction. Write for full information.

C. I. EARLL COMPANY, Inc.

YORK, PA.

FOREIGN AGENTS
INTERNATIONAL GENERAL
ELECTRIC CO.
SCHENECTADY, N. Y.

CANADIAN DISTRIBUTORS
RAILWAY & POWER ENGINEERING
CORPORATION, LTD

earll

TROLLEY RETRIEVERS

YOU'RE THE DOCTOR

...with Perfect Circle's

2-in-1 Chrome Piston Ring Set

Every set offers a choice of spring pressures!

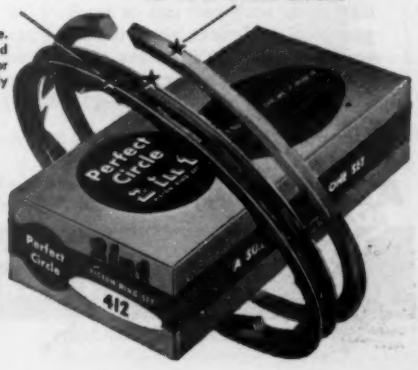
Now—for the first time—mechanics can choose the spring pressure best suited to every engine without switching between various brands or types of rings!

Only Perfect Circle's 2-in-1 Chrome Set offers a choice of spring pressures! Two expander springs —a NORMAL PRESSURE Spring for resleeved, rebored and slightly worn engines, and a HIPRESSURE Spring for badly worn engines—are packed with each Chrome Oil Stopper.

The 2-in-1 Chrome Set more than doubles the life of cylinders, pistons and rings, because solid chrome plating on top compression rings and the steel rails of the oil rings assures twice the life of ordinary ring sets! Yes, for double service, double life, sustained power and new economy—specify 2-in-1! Perfect Circle Corporation, Hagerstown, Indiana.

PLATED WITH SOLID CHROME

Steel rails plated with Solid Chrome. Alternate HiPressure Spring packed with each Chrome Oil Stopper for positive oil control even in badly worn engines.



Perfect Circle

The Standard of Comparison

You'll feel safer...

... and BE safer...

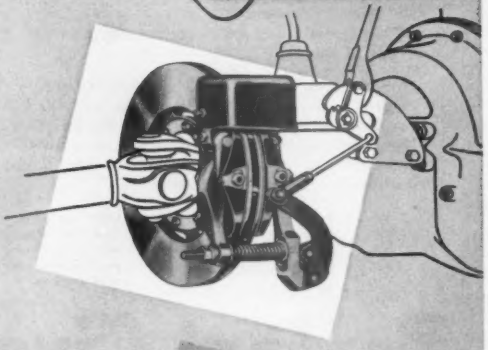
TRU-STOP is a ventilated, disc-type brake which attaches to the drive shaft of all trucks and buses. Hand-operated lever mechanism exerts equal and opposite pressure using entire surfaces of both shoes. Simplicity of TRU-STOP design permits adjustments, even relining, without dropping drive shaft.

TRU-STOP Brakes serve in an emergency, as an auxiliary brake on long downgrades, and as a positive parking brake. The smooth gripping action, the "feel" of deliberate deceleration when the brake is applied in a moment of emergency, makes the driver feel safer . . . makes the equipment safer. TRU-STOP Brakes are an investment in safety.

You can have TRU-STOP Brakes installed at the factory on your new bus or truck . . . or you or your local dealer can install them on your present equipment. TRU-STOP Brakes prevent accidents, eliminate road delays, reduce servicing costs. Is it worth the gamble *NOT* to install TRU-STOP Brakes?

See your dealer today or write for literature

with TRU-STOP *Emergency* BRAKES



ACCO

601 Stephenson Bldg., Detroit 2
2475 Porter Street, Los Angeles 21 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

In Business for Your Safety

"Intentionally Better" TRU-STOP *Emergency* BRAKES

You'll ring up more profits with BENIUM*

BECAUSE YOU SAVE MORE ON MAINTENANCE BILLS!

Saving is a cinch with these rugged Bendix Eclipse Brake Blocks. And *Benium* is the amazing ingredient that turns the trick. How? By giving you lots of extra miles in every set. This means longer periods between brake servicing jobs—valuable extra time that can be spent hauling profitable loads. The next time your trucks are in the shop, install Bendix Eclipse Brake Blocks all around—then watch the results. In the long run, you will ring up more profits when you rely on *Benium*.

BENIUM* *Heat-resisting material is the secret ingredient developed by the Marshall-Eclipse Division of Bendix and used exclusively in Eclipse brake linings and heavy-duty brake blocks.*

Eclipse Brake Blocks

A PRODUCT OF Bendix

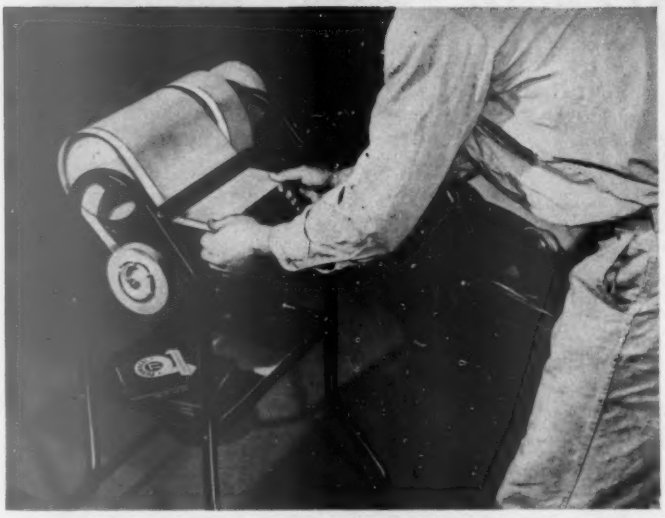
Greatest Name in Braking!

MARSHALL-ECLIPSE DIVISION OF
TROY, NEW YORK

Bendix
AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

NOW DO ALL MASKING JOBS TWICE AS FAST!



WITH THE NEW Permacel DOUBLE-DUTY MASKER

TWO WORKERS...TWO ROLLS... TWICE THE EFFICIENCY. Now one man can mask the window and body jobs with the 9" roll. The other man can do trim, grille and small jobs with the 3" roll! You save time, labor costs and get greater usefulness from materials. The new **PERMACEL** Double-Duty Masker is strong, sturdy, easy to move anywhere in your shop.

"COMPLETE MASKING DEPARTMENT ON WHEELS."

This new masker is portable, sturdy, easy to use. Masking apron is delivered complete with tape perfectly aligned to the paper in 2 sizes! No waste, no extra steps, no extra time!

EASY, INEXPENSIVE CONVERSION. Owners of the **PERMACEL 7-K** Masker can switch over in less than 5 minutes with a few turns of a screwdriver. The **PERMACEL-071** Conversion Kit illustrated above is available for distribution now.

WRITE DEPT. 10S FOR Free Booklet "MASK 'EM QUICK AND EASY"

®Permacel 77

INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J. makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry.

Now...Metal Fare Tokens Tailored to Your Needs!

Styled to your design...for positive identification, easy collection, and protection against duplication...and priced to fit your budget!

Available now at Meyer & Wenthe! Solid metal fare tokens tailored to your individual needs!

A NEW IDEA IN PROMOTION

These new *Tailored* Tokens open the door to unusual merchandising methods to attract riders and build good will for you. Get the complete story today!

These new *Tailored* Tokens are of the same high quality that have made M&W Allocated tokens outstanding in transportation service. They come in a variety of attractive designs without perforation—individualized with your monogram, trade mark or other identification, similar to the samples shown.

Find out today how easy it is now to simplify inspection and collection, and protect revenue *at nominal cost* . . . with M&W Tailored Tokens!

ESTABLISHED 1854

Meyer & Wenthe

TRANS... ...SION

30 S. JEFFERSON ST., CHICAGO 6, ILL.

M & W METAL TOKENS ARE AN INVESTMENT...NOT AN EXPENSE!

UTILITY EQUIPMENT

for Service that Pays Dividends

DESTINATION and ROLLER SIGNS

★ Easy to read letters—long wearing —washable, waterproof deluxe sign cloth—wide variety of standard types —special designs made as required.

HEATERS *Equipped with* CHROMOLOX STRIPS

Cars kept at temperatures that please riders. No vibration troubles—installation costs are low—investigate Utility advantages before you make your heater specifications.

***Honey-comb Type Stainless Steel* VENTILATORS**

★ Applicable to all types of cars and buses. No down drafts. Give your riders this well engineered car and bus ventilation.

RAILWAY UTILITY COMPANY

ESTABLISHED 1905

2241 to 2247 INDIANA AVENUE ZONE 16, CHICAGO

Eastern Office: Ross F. Hayes Co. 50 Church St., NEW YORK CITY CANADIAN REPRESENTATIVE: Railway Power & Engineering Corp., Toronto, Can.
Special representative for Indiana, Ohio, and Michigan Mr. Henry A. Stone, 547 Rivenoak Ave., Birmingham, Mich.

"Might as well leave out the shock absorbers, too!"

What's the gentleman above saying? Listen . . .

"If we don't start making our riders more comfortable," he says, "more of them will start finding other ways to travel. And we can't afford that! I say we might as well leave the shock absorbers out of our new buses if we leave out these modern temperature controls!"

Fortunately, the committee's decision won't be hard to make. Honeywell Moduflow Temperature Controls cost no more than old-fashioned on-off systems. And Moduflow eliminates *all* the poor heating conditions you know so well—stagnant air, drafty floors, hot and cold spots.

You see, Moduflow operates on a different principle. It provides a *continuous* flow of heat, metered to the exact need at any given time. And it provides *continuous* air circulation—so the heat is distributed evenly from wall to wall, from floor to ceiling.

A simple, sure, *air*-operated system, Moduflow is economical to install and maintain—offers many other advantages you'll want to know more about. For complete information on Honeywell Moduflow, call your local Honeywell office or mail the coupon *today*.

MINNEAPOLIS
Honeywell
First in Controls

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Minneapolis 8, Minnesota, Dept. BT-9-98

Gentlemen: Please send me complete information on your Moduflow System for buses.

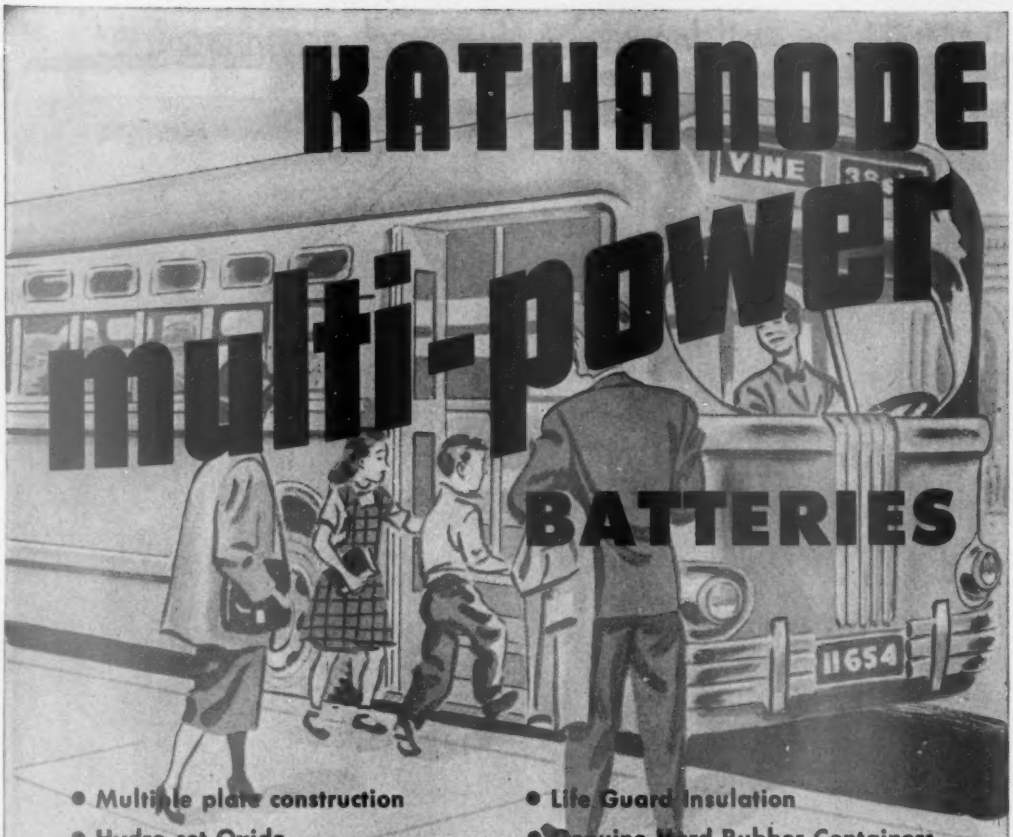
Name_____

Firm Name_____

Address_____

City_____ Zone_____ State_____

KATHANODE multi-power BATTERIES



- Multiple plate construction
- Hydro-set Oxide
- Life Guard Insulation
- Genuine Hard Rubber Containers

ASK YOUR JOBBER ABOUT THE GOULD-NATIONAL BATTERY LIFE INSURANCE PLAN

THE **KATHANODE** CORP.

a subsidiary of GOULD-NATIONAL Batteries, Inc.

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FACTORIES: Atlanta • Chicago • Dallas • Leavenworth • Los Angeles • Lynchburg • Marlboro
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*Industrial Factories

If you could look at it like a banker...

you'd order the SUPER RED DIAMOND

Let's suppose you're a banker. It's your responsibility to look at the Super Red Diamond as you'd look at any other investment.

You: Tell me about your present condition.

SRD: Basically sound, sir. I'm really full of new pep.

You: What rate of return do you give?

SRD: Even more than you might expect. I've got new features that mean new efficiency and new economy in performance—new slo-roto valves . . . new extra-thin cylinder liners . . . new positive-type crankcase ventilating system. Plenty of other features, too.

You: Excellent! What about references?

SRD: The best. I'm an improved version of the Red Diamond engine. That's the engine that proved so successful in bus operation that it became the choice of such leading bus manufacturers as General American Aerocoach; Beaver Metropolitan Coaches; C. D. Beck & Company; ACF Brill Motors Company; Crown Body & Coach Corporation; Gillig Brothers; Kalamazoo Coach Company; Spartan Coach & Manufacturing Company; and Superior Coach Corporation.

Available in 372, 406, and 450 cubic inch displacements, the new International Super Red Diamond engine is a mighty profitable investment for your bus operations.

For complete information about this new power plant, write International Harvester Company, 180 N. Michigan Ave., Chicago 1, Illinois.

International Harvester Builds
McCormick Farm Equipment and Farmall Tractors
Motor Trucks . . . Industrial Power
Refrigerators and Freezers

INTERNATIONAL ENGINES

MADE BY THE MAKERS OF INTERNATIONAL *HEAVY-DUTY* *ENGINEERED* TRUCKS

Rely on the DELCO LINE

for

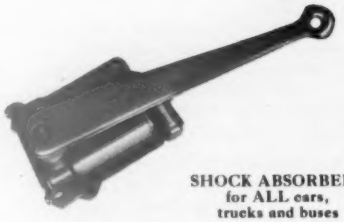
protecting equipment

maintaining schedules

availability of units and parts

ease of replacement

passenger comfort



SHOCK ABSORBERS
for ALL cars,
trucks and buses

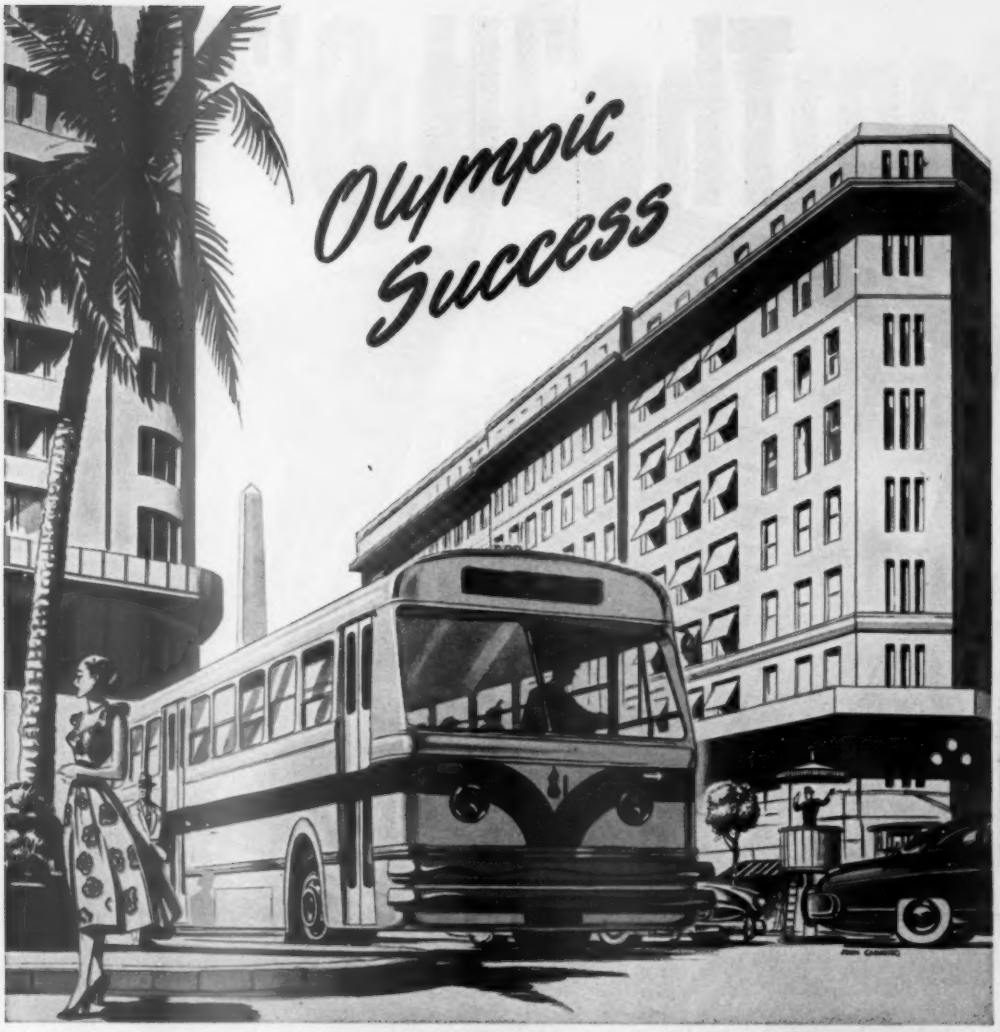
There are no shock absorbers like *hydraulics* . . . no hydraulics like *Delcos.* That explains why more cars, trucks and buses are equipped with Delcos than with shock absorbers of any other make. It explains, too, why you can *rely on the Delco line* to help minimize operating and maintenance costs. The widespread United Motors organization makes Delco replacement units and parts readily available.

DELCO PRODUCTS

Division of General Motors Corporation, Dayton, Ohio

UNITED SERVICE MOTORS

DELCO SHOCK ABSORBERS—
A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS



in the Argentine

The unrivalled success of the Olympic chassisless bus in the Argentine has led to the placing of a record order for 450 of these fine under-floor engined passenger service vehicles.

Incorporating all the most modern features of design, the Olympic is selected for its favourable power-to-weight ratio, high passenger carrying capacity, speed and acceleration, whilst its lightness of control ensures easy driving.

Leyland M·C·W

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Head Office and Works
LEYLAND · LANCASHIRE · ENGLAND
Telephone: LEYLAND (Lancs) 1400 (16 lines)
Telegraphic Address: LEYMOTORS LEYLAND

METROPOLITAN-CAMMELL-WEYMANN MOTOR BODIES LIMITED
VICKERS HOUSE, BROADWAY, S.W.1
Telephone: ABBey 2611 (12 lines)
Grams & Cables: [illegible] LONDON

The "U.S." Tire

TIRE RENTAL AGREEMENT
19
day of
THIS AGREEMENT, made this
by and between
, hereinafter termed the "Operator",
of
and United States Rubber Company, a New Jersey Corporation hereinafter
termed the "Supplier".
WITNESSETH that the said parties have agreed as follows:
1 FURNISHING, USE AND SERVICING OF EQUIPMENT. The Supplier will
furnish and the Operator will procure from the Supplier and use
exclusively on all of the vehicles owned and/or operated by it, in
necessary quantity, tire equipment furnished by the Supplier.
Such necessary quantity shall consist of one casing, one tube and
one flap for each wheel and one spare tire on each such vehicle,
and such additional quantity of tire equipment mounted on rims and
kept at the Operator's place of business for use in emergency as
shall be reasonable.
The Operator will install or have installed convenient air
lines properly to inflate said tires and will keep said tires in-
flated to an air pressure recommended by the Supplier. The Operator
will keep the wheels on its said vehicles in alignment and the brakes
properly adjusted. The Supplier will make or procure its authorized
service stations to make any repairs on tires which the Supplier may
deem necessary to keep them in proper running condition and will
mount and dismount tires from rims when so deemed necessary. The
Operator will make all wheel changes, will maintain sufficient spare
-1-
U.S. ROYAL
RAYMASTER

Mileage Contract

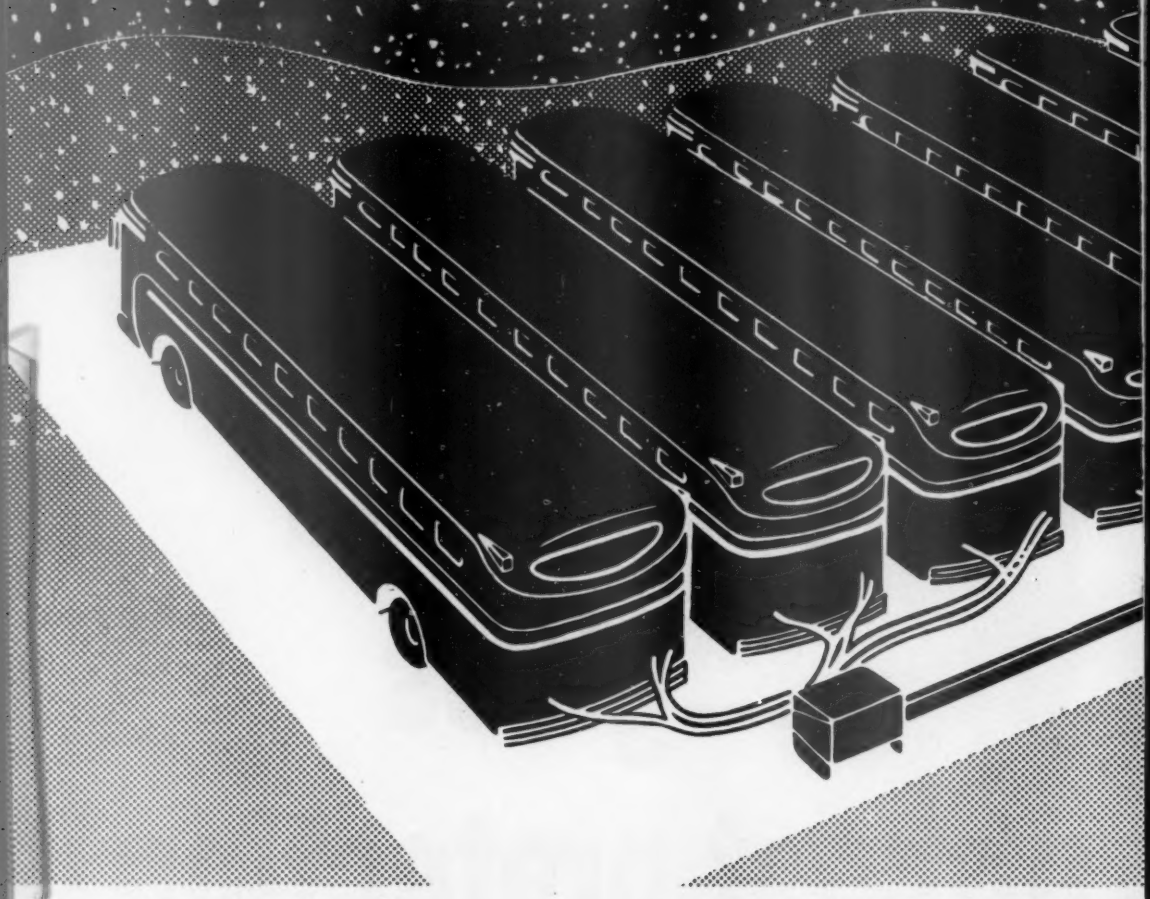
controls your costs ...gives utmost protection!

Tire Mileage Department

UNITED STATES RUBBER COMPANY

1230 AVENUE OF THE AMERICAS · NEW YORK 20, N. Y.

THE ONLY ANSWER TO



Yes—ready to cheer up shivering drivers and passengers because the coach heating systems immediately deliver when engines make their smooth summer-like start at the touch of the starter button on zero mornings.

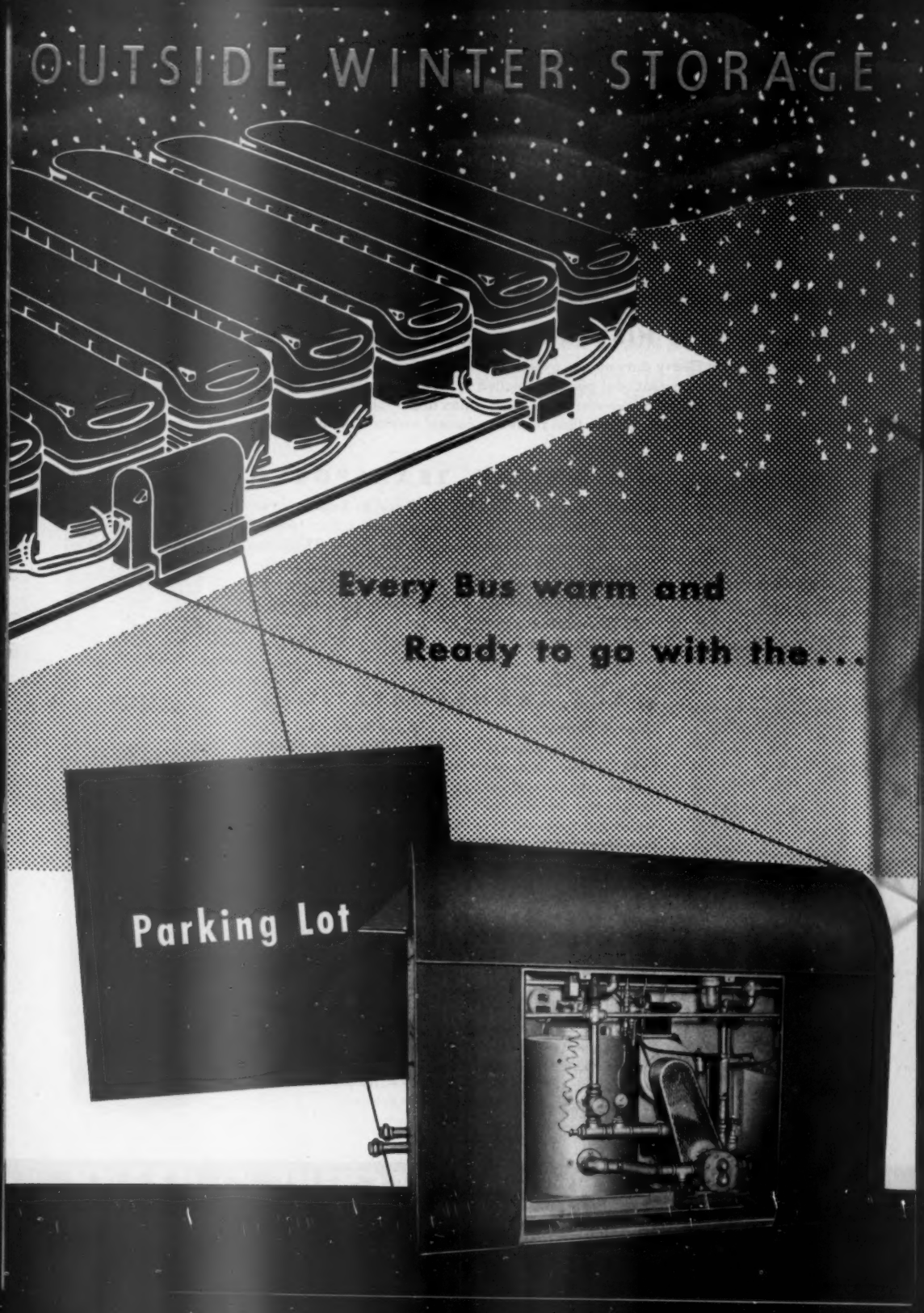
Your engines will be better protected than in 60° garages because the Vapor Parking Lot Heater keeps them at summer starting temperatures at less than 10% of the cost of inside storage.

Idling ruins engines and costs you ten times as much in fuel consumption as compared to the Vapor system.

Keep taxes, operating costs and your investment at minimum by following the experience of the largest operating companies from coast-to-coast who now use nearly 69 Vapor Parking Lot Heaters. (Names on request.) Whether you are storing your buses under cover or outside you will find the Vapor Parking Lot Heater indispensable for feeding radiation to heat your garage or your buses direct. It is a self-contained automatic heating system of rugged, dependable construction. Minimizes Winter Battery Problems.

Seeing is believing—See the Vapor Parking Lot Heater in actual service on Chicago and Cincinnati properties during conventions.

VAPOR HEATING CORPORATION


OUTSIDE WINTER STORAGE
Every Bus warm and
Ready to go with the...
Parking Lot

DUALOY EVIDENCE

TYPICAL TEST HISTORIES ILLUSTRATE DUALOY SUPERIORITY

TEST PROCEDURE: Heavy duty engine overhauled with pistons purchased from Automotive Parts Distributor's Stock. DUALOY and conventional pistons installed in alternate cylinders. Test installation then subjected to normal commercial transport operational practices. Upon ring or piston failure all conventional pistons removed and replaced with DUALOY. Engine then placed in normal service until next operational interruption.

◀ HIGHWAY TRANSPORT ▶

Case 2: Number 2 cylinder failed at 41,078 miles. No compression, high oil consumption. Three conventional pistons replaced with DUALOY and unit put back in service.

Case 2: Engine overhauled after 189,428 miles. DUALOY pistons re-ringed and reinstalled in same engine. Reason for overhaul: 12 months' operational overhaul.

◀ BUS TRANSPORTATION ▶

Case 4: Number 6 cylinder. Piston ring failure at 68,562 miles. Number 4 piston also showed excessive top ring groove wear, but ring still intact. Three conventional pistons replaced with DUALOY.

Case 4: Engine overhauled after 176,691 miles. All pistons reinstalled with same rings. Reason for overhaul: Bearing failure.

◀ INTERSTATE TRANSPORT ▶

Case 5: Number 1 and 3 cylinders. (Piston from cylinder 3 shown.) Ring failures at 52,349 miles. Conventional pistons replaced with DUALOY and unit resumed schedule operations.

Case 5: Engine overhauled after 207,114 miles. Cylinders rebored .060 oversize. DUALOY pistons re-ringed and reinstalled. Reason for overhaul: Seasonal overhaul.

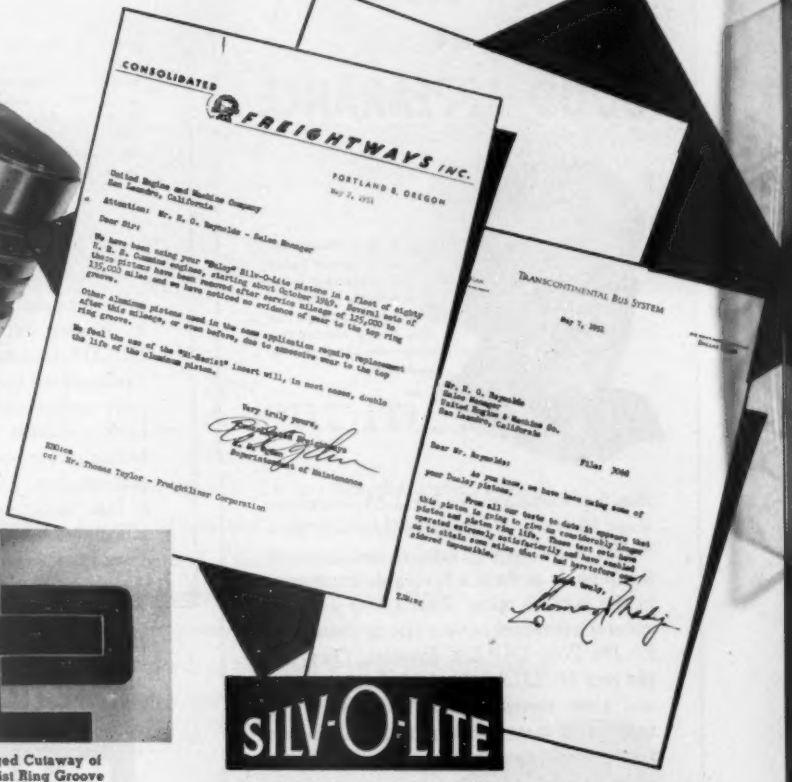
UNITED ENGINE AND MACHINE COMPANY

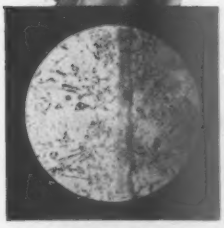
310 PREDA STREET · SAN LEANDRO, CALIFORNIA

DUALOY VERDICT

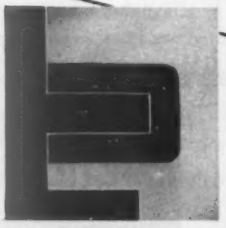
OF COST CONSCIOUS FLEET OWNERS AND OPERATORS

DUALOY HAS NO EQUAL. They give longer life and freedom from top ring failures due to excessive top ring groove wear. **DUALOY** is the ***first basic improvement*** in heavy duty piston design. Buy **DUALOY *the original*** bimetallic molecular bonded piston.


CONSOLIDATED FREIGHTWAYS INC.
PORTLAND 8, OREGON
United Engine and Machine Company
San Leandro, California
Attention: Mr. R. O. Reynolds - Sales Manager
Dear Sirs:
We have been using your "Silv" Silv-O-Lite pistons in a fleet of eighty U. S. C. Cummins engines, starting about October 1949, several sets of these pistons have been removed after service mileage of 125,000 to 135,000 miles and we have noticed no evidence of wear to the top ring groove.
Other aluminum pistons used in the same application require replacement after this mileage, or even before, due to excessive wear to the top ring groove.
We feel the use of the "Ni-Resist" insert will, in most cases, double the life of the aluminum piston.
Very truly yours,
Superintendent of Maintenance
RMKlcm
cc: Mr. Thomas Taylor - Freightliner Corporation
TRANSCONTINENTAL BUS SYSTEM
May 7, 1951
Mr. R. O. Reynolds
Sales Manager
United Engine & Machine Co.
San Leandro, California
Dear Mr. Reynolds: Filat 3066
As you know, we have been using some of your Dualoy pistons.
From all our tests to date it appears that pistons are going to give us considerably longer operated extremely well and have enabled us to obtain some satisfactorily and have enabled altered impossible.
Very truly,
Thomas J. Reidy



Photomicrograph of Bi-metallic Molecular Bond



Enlarged Cutaway of Ni-resist Ring Groove

SILV-O-LITE

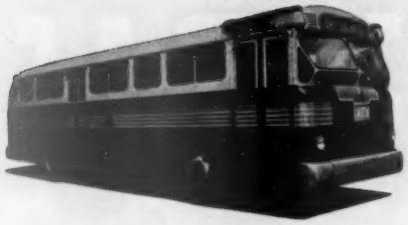
SILV-O-LITE has the most complete line of passenger car and heavy duty pistons available. Heavy duty types are available with or without DUALOY*, according to your requirements for top ring land protection.

Send for Catalog 24 and DUALOY* literature

*Trademark Registered.
*The United Engine & Machine Company (manufacturers of Silv-o-lite pistons) are licensed by Fairchild Engine & Airplane Corporation under patents 2396730 and 2455457 to use the Al-lin process in the manufacture of bi-metallic molecular bonded pistons

UNITED ENGINE AND MACHINE COMPANY

310 PREDA STREET · · SAN LEANDRO, CALIFORNIA



Managers of Transportation find that "DULUX" PAYS OFF IN GOOD APPEARANCE

MR. J. M. JOHNSTONE, Manager of the South Carolina Electric & Gas Co., is responsible for the appearance of 150 buses and 300 service vehicles that cover over 10 million miles each year.

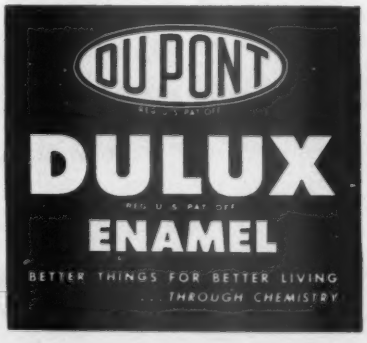
Bus-fleet managers like Mr. J. M. Johnstone know the value of passenger good will. They realize that a bus with a smart, well-groomed finish tends to form a favorable impression in the public's mind. That's why so many general managers have a strong preference for Du Pont DULUX Enamel. They like the way DULUX holds its handsome color and gloss through many months on the road. And they know that this helps win public confidence in the line's service.

Maintenance men find that "DULUX" PAYS OFF IN ECONOMICAL UPKEEP

MR. F. F. WASSER, Superintendent of Equipment of the South Carolina Electric & Gas Co., uses DULUX Ivory on the upper sections and DULUX Red on the lower parts of their buses.

Superintendents of Equipment like Mr. F. F. Wasser will tell you that top-quality DULUX is unsurpassed in its resistance to damage from traffic gases, oils, bad weather and rough handling. What's more, DULUX's smooth, even flow and exceptional hiding power spell trouble-free paint shop performance. For them, DULUX pays off in less "down time," lighter maintenance schedules, lower day-to-day maintenance costs.

GOOD-LOOKING BUSES make good impressions wherever they go. Keep your fleet looking its best *all ways* with Du Pont DULUX Enamels. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Delaware.



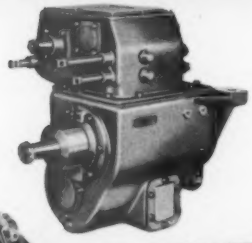
Reproduced from Original Bas-Relief, Cathedral of Toledo, Spain

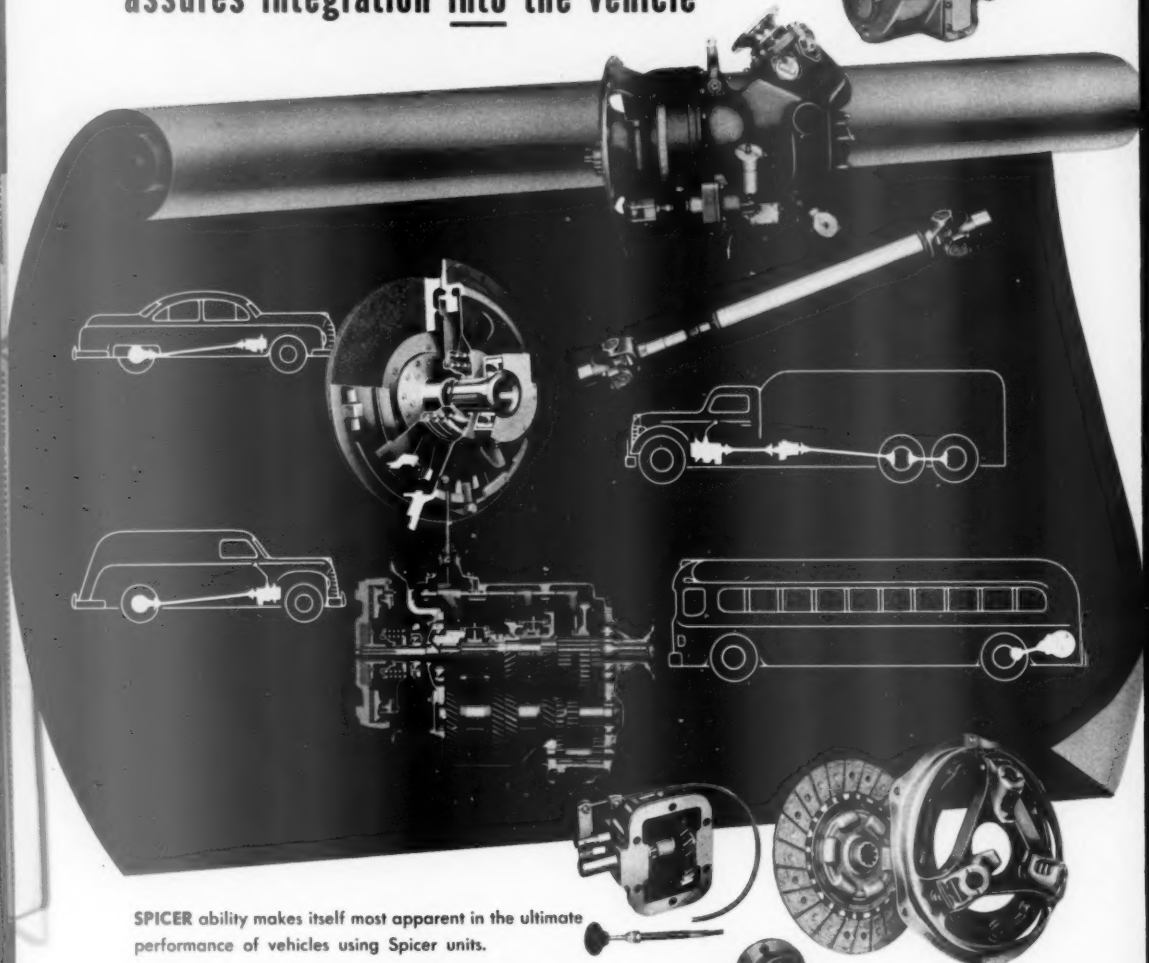
Heritage of the Centuries

The Spanish city of Toledo in the Fifteenth Century was the world center of steel craftsmanship. Artisans forged and shaped and tempered outstanding instruments of peace and war. The immortal quality of their accomplishments lives on in the modern American city of Toledo. Here Spicer, backed by nearly fifty years of experience, maintains the centuries-old standards of fine steel artistry, with automotive power transmission equipment that is the "Standard of the Industry."

SPICER DESIGN

assures integration into the vehicle





SPICER ability makes itself most apparent in the ultimate performance of vehicles using Spicer units.

SPICER integrated design helps efficiently to transform *power into payloads,* through harmonious cooperation with all other motive units in the entire assembly.

SPICER builds nearly a half-century of designing and manufacturing experience into its products . . . and backs these products with a service policy that assures long-range protection to the user.

THE SPICER line meets a large majority of the power transmission needs in passenger cars, trucks, buses, tractors, rail cars, and railway generator drives.

47 YEARS OF **Spicer** SERVICE

SPICER MANUFACTURING • *Division of Dana Corporation* • **TOLEDO 1, OHIO**

TRANSMISSIONS • PASSENGER CAR AXLES • CLUTCHES • PARISH FRAMES • STAMPINGS • FORGINGS • TORQUE CONVERTERS • UNIVERSAL JOINTS • SPICER "BROWN LIPE" GEAR BOXES • POWER TAKE OFFS • RAIL CAR DRIVES • RAILWAY GENERATOR DRIVES

Congratulations

to the Transit Industry on 100 Years of Progress!

TRANSIT PROGRESS DAY, SEPTEMBER 24, 1951

It is a far cry from the car powered by one horse in 1851 to the 1951 bus with its great horsepower rating.

This has been a century of miracles, and the drastic changes in every phase of living have demanded equally drastic changes in transit accommodations.

Step by step, decade by decade, the Transit Industry has risen to the challenge. Horse cars have given way to cable cars and trolleys, and —finally—to the fine modern buses now serving nearly every community.

Not the least of the improvements in transit relates to the riding comfort of the passengers, and American Seating Company is proud to have had a part in pioneering many improvements which contribute to that comfort.

As the Transit Industry moves into its next century of achievement, American Seating Company will keep pace—devoting the resources of its vast engineering, research, and manufacturing facilities to continuing improvement of the products it furnishes to leading bus manufacturers.

American Seating Company

WORLD'S LEADER IN PUBLIC SEATING

Grand Rapids 2, Michigan • Branch Offices and Distributors in Principal Cities

Manufacturers of Transportation, Theatre, Auditorium, School, Church, Stadium Seating, and Folding Chairs.

picture of a *Star Salesman*

making a call...

You can't have better salesmen than your own buses!

No public transportation salesman's calling card presents greater recognition value, or creates more lasting favorable impression, than clean, good-looking mobile equipment. In terms of dollars *saved* on refinishing and dollars *earned* in good-will and increased traffic, Arco Bus Finishes are your most economical, long-term investment. That's because Arco's unique tailored-to-the-job research facilities...which few paint companies are in a position to offer...provide uncommonly durable protective finishes. Give your equipment this extra advantage and you'll make *every bus a star salesman.*

ARCO PAINTS
Quality... SINCE 1881

Paints, Lacquers, Varnishes, Enamels, Protective Coatings
TRADE MARK

TESTED FIRST TO *L A S T !*

THE ARCO COMPANY, Cleveland 27, Ohio • ARCO COMPANY OF CALIFORNIA, LTD., Los Angeles 1, Calif.

Enjoy an Extra Margin of Profit with the

Low Cost Superior COMMUTER

IDEAL FOR
TRANSFER AND SHUTTLE SERVICE
SUBURBAN AND ROUTE EXTENSION SERVICE
CHARTER AND UTILITY SERVICE
PLANT PERSONNEL TRANSPORTATION
MILITARY TRANSPORTATION

Here's NEW Economy and Versatility in Short-Haul, Frequent-Stop Service

You increase your profits by as much as you can reduce your equipment investment, operating and maintenance costs. That's why the Superior Commuter, designed with these three profit factors in mind, is today's best bus buy.

The Commuter gives you all the de luxe features you want for customer safety, comfort and convenience—high 76" headroom, generous-width seats, full-view transom windows, heavy insulation of body panels, efficient ventilation, and Superior's super-safe, super-strong construction.

Mounted on the chassis of your choice, the new Superior Commuter will meet all your requirements for efficient, economical service, and will enable you to realize a maximum of profit. Available in seating capacities from 17 to 41 passengers. See your Superior distributor for complete information . . . or write direct to Superior Coach Corporation.

Superior

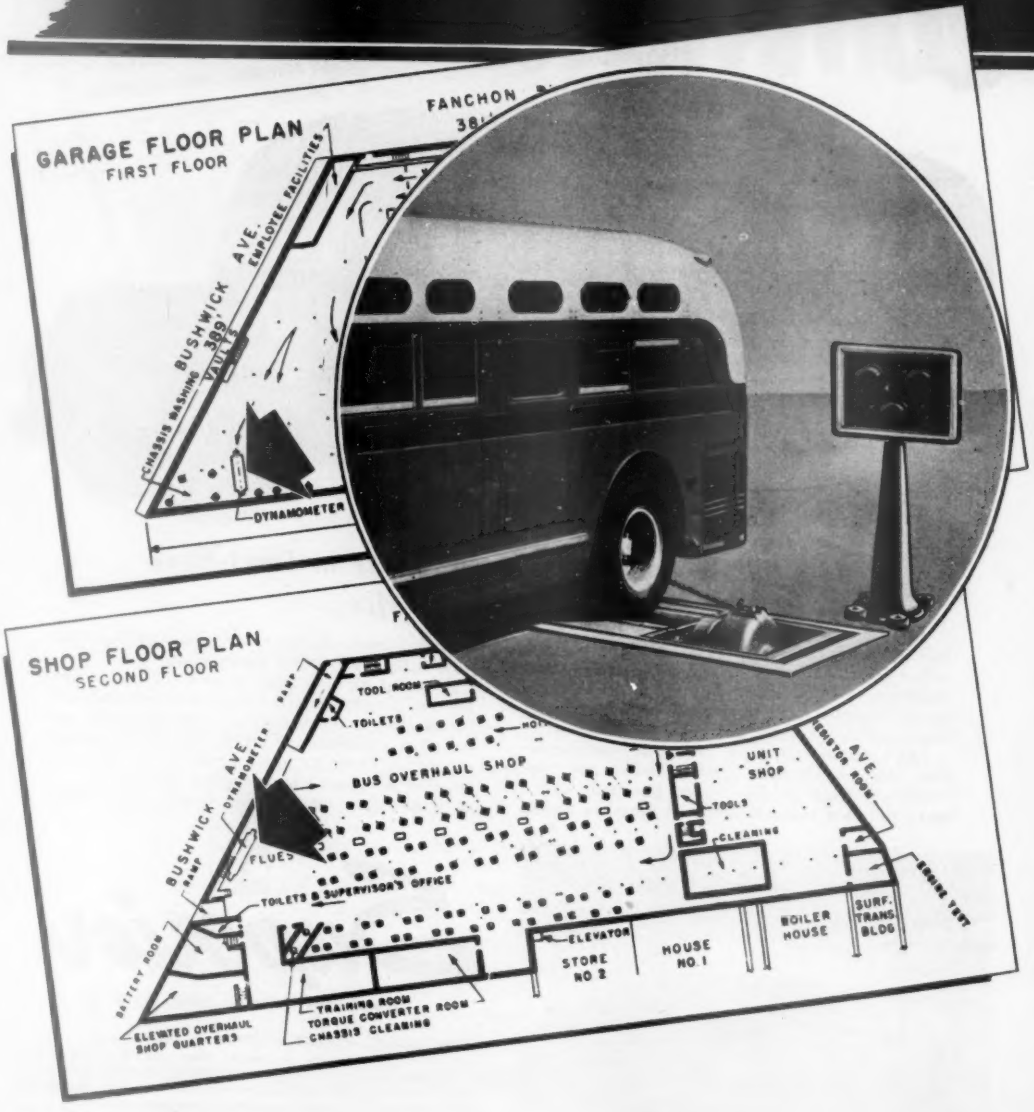
COACH CORPORATION, LIMA, OHIO

COMFORTABLE, ROOMY INTERIOR. *Excellent all-round visibility for both standee and seated passengers. New dome lights scientifically designed for all-over lighting. Wide, rib-tread aisle for safe footing. Fully dust-proofed, fume-proofed, sound conditioned and insulated for complete passenger comfort.*

THE LARGEST BUS MAINTENANCE PLANT
IN THE WORLD USES

BENNETT-FERAGEN

CHASSIS DYNAMOMETERS

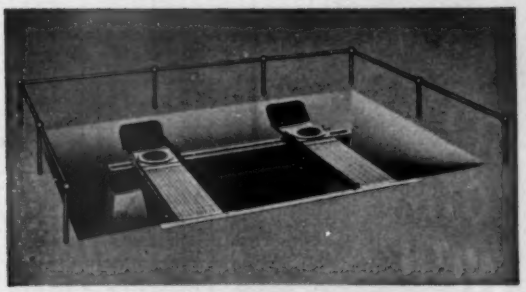


—they speed service and keep costs down in maintaining the 3000 buses in this new $11 Million Bus Shop . . . the East New York Bus Depot . . .

●

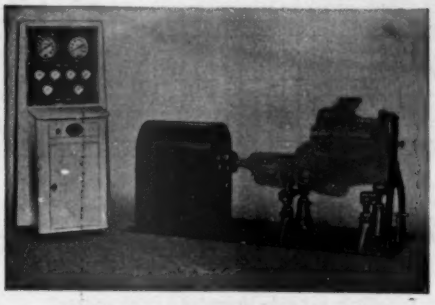
Just as this huge plant is experiencing cost savings in a large way — so too can you get a quick, accurate picture of the performance of the carburetor, fuel pump, spark plugs, distributor, ignition, timing, clutch, etc. with the BENNETT-FERAGEN DYNAMOMETER. It can detect trouble in the engine or other operating parts before they occur and before they start to drain your earnings.

Get all facts on this equipment now and have one of our engineers call to look over your particular set-up and make recommendations based on long experience.



★ ***TRUCK CHASSIS ANALYZER***

The BENNETT-FERAGEN heavy duty type (CAP-57) and Super Duty Type (CAP-77) Pit Type Chassis Analyzers provide complete front end service for trucks of all makes and sizes. Complete correction equipment furnished with each analyzer permits fast, safe, accurate operation. All units equipped with the famous BENNETT-FERAGEN Turntables and the patented Wheel Aligner designed especially to handle the heaviest trucks. An outstanding heavy duty Wheel Balancer is available as a companion piece



★ ***ENGINE DYNAMOMETER***

BENNETT-FERAGEN Engine Dynamometers measure power output of any engine under all loads and operating conditions. A true picture of engine efficiency, valve, ignition, and carburetor synchronization throughout the operating range of the engine is reflected in the readings obtained. These Dynamometers are made in a range of sizes and capacities from Fractional H.P. to 10,000 H.P.

★ ***BRAKE TESTER***

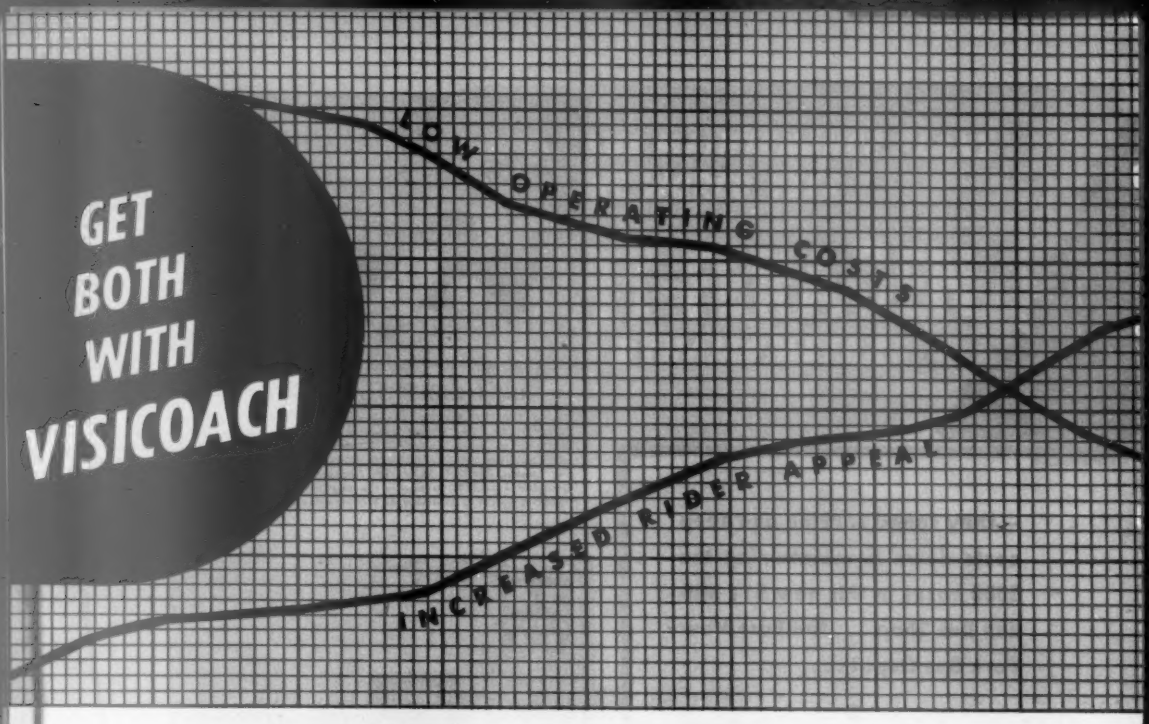
Reveals true condition of your vehicle's Brakes . . . shows braking power of each wheel . . . measures brake torque . . . tests brake equalization . . . indicates inadequate brakes and prevents tire wear. Analyzes brake action through entire operating range. Eliminates road testing. Indicator dials clearly visible from the pit, saving time and effort during adjustment. Several models available.

BENNETT-FERAGEN, INC.

1005 S. LA FAYETTE BLVD.

SOUTH BEND 18, INDIANA

GET BOTH WITH VISICOACH



Your Profits Start where these lines meet

Visicoach is built to provide increased rider appeal combined with low operating costs.

Today, more than ever, choosing a coach calls for careful consideration of these facts.

Nowhere will you find a coach that combines all the virtues of the Visicoach. It has attractive and restful interiors that stay smart looking for years . . . Panoramic side windows that admit more light, let passengers see more. Foam rubber seat cushions are standard equipment . . . "silversides" at no extra cost . . . Flxi-Lube springs, long-lived and silent . . . Synchromesh 5-speed transmission . . . with a wide range of horsepowers in gas, diesel or propane engines . . . choice of capacity with 25 or 29 Intercity, 33 or 37 Suburban Express models.

THE FLXIBLE COMPANY • LOUDONVILLE, OHIO, U. S. A.

Akron-Manchester Bus Line
Clinton, Ohio

Arrow Coach Lines
Brownwood, Texas

Autobuses Anahuac
S.A. de C.V.
Piedras Negras, Coahuila, Mex.

Anoka-Minneapolis
Minneapolis, Minn.

AirportTransit, Inc.
Los Angeles, Cal.

Airlines Transportation Co.
Pittsburgh, Penna.

Arrow Coach Lines
Vincennes, Indiana

Autobuses El Aguila
Piedras Negras, Mexico

Airport Limousine, Inc.
San Francisco, Cal.

Airlines Transit Co.
St. Louis, Mo.

Atlanta Baggage & Cab Co.
Atlanta, Georgia

Badger Coaches, Inc.
Madison, Wisconsin

The Blue Line
Lewiston, Maine

Blue Gray Stages, Inc.
Puyallup, Washington

Boise-Winnemucca Stages
Boise, Idaho

Bowling Green-Hopkinsville
Bus Co.
Russellville, Kentucky

Brunswick Transp. Co., Inc.
Brunswick, Maine

O. H. Byerly
Dalmatia, Pa.

Capital Stage Lines
Lincoln, Nebraska

Capital Motor Lines
Montgomery, Alabama

Caprock Bus Lines
Shamrock, Texas

Car Leasing Co.
Maywood, Ill.

Carey Transportation, Inc.
New York City, N. Y.

Wm. H. Cahill
New Orleans, La.

Center Service
Columbus, Nebraska

Citizens Auto Stage Co.
Nogales, Arizona

Columbia Pictures Corp.
Hollywood, California

Consolidated Bus Lines
Bluefield, West Virginia

Chicago South Shore—
South Bend R.R.
Michigan City, Ind.

Continental Air Transp. Co.,
Inc.
Chicago, Ill.

Dixie Traction Co., Inc.
Covington, Kentucky

Durham-Dunn Bus Co.
Durham, North Carolina

Department of Correction
Folsom, Calif.

Henry S. Erachen
Berlinsville, Pa.

El Alamia
Cairo, Egypt

E. & M. Transit Co.
East Canton, Ohio

Essenat & Co.
New Orleans 12, La.

Fisher's Limousine Service
San Francisco, Calif.

The Gray Line Tours
Seattle, Washington

Gradison Auto Bus
Burgettstown, Pa.

Grand Island Transit Corp.
Buffalo, New York

Gould Bus Line
Oswego, New York

Grooms's Bus Service
Richmond, Virginia

Highland Lines, Ltd.
Halifax, Nova Scotia

Hotard Bus Line
Reserve, Louisiana

Holloway Bus Service, Inc.
Clementon, N. J.

Howard Saber, Inc.
Springfield, Ohio

Hudson Bus Lines
Medford, Mass.

Interstate Transportation Co.
Taunton, Massachusetts

Interstate Transportation Co.
Bismarck, N. D.

Inter City Transit Co.
N. Little Rock, Arkansas

Indiana Motor Bus Co.
Plymouth, Indiana

Intercity Coach Co.
Danbury, Conn.

Jack Rabbit Lines
Sioux Falls, S. Dakota

Jordan Bus Co.
Hugo, Oklahoma

Knuderer Bus Line
Bridgeboro, New Jersey

LaPort Bus Line
New Iberia, Louisiana

Lincoln Coach Lines
Irwin, Pa.

Linea D'Autobus
Mexico, D.F.

Loudonville-Mansfield Bus Line
Loudonville, Ohio

Metro-Goldwyn-Mayer Pictures
Culver City, Calif.

Mass. Northeastern Transp.
Merrimac, Mass.

Mid-Continent Coaches
Oklahoma City, Oklahoma

Miss. Power & Light Co.
Jackson, Mississippi

Miller & Salter Bus Line
Jonesboro, La.

Mountain View Coach Lines,
Inc.
Cossackie, N. Y.

Meadville City Lines
Meadville, Pa.

The Motor Bus Co.
Chippewa Falls, Wis.

New Mexico Trans. Co., Inc.
Roswell, New Mexico

Nueces Transportation Co.
Corpus Christi, Texas

Okanogan Valley Bus Line
Spokane, Wash.

Pan American World Airways
Long Island City, N. Y.

Panhandle Stages.
Amarillo, Texas

Palmetto Bus Line
Beaufort, S. C.

Painter Bus Line
Uvalde, Texas

Pittsfield Yellow Cab Co., Inc.
Pittsfield, Mass.

Pickett Service Co.
Blackstone, Virginia

Potters Bus Line
Mifflintown, Pa.

Queen City Coach Co.
Charlotte, N. C.

Rainier National Park Co.
Tacoma, Washington

Ritchey Transportation Co.
New Bethlehem, Pa.

Salt Lake-Tooele Stage Lines
Salt Lake City, Utah

Service Coach Line, Inc.
Dublin, Georgia

Smeal Bus Line
New Castle, Pa.

Southwest Coaches
Oklahoma City, Oklahoma

Southeastern Motor Lines, Inc.
Carrollton, Georgia

Syracuse & Oswego Motor
Lines
Syracuse, N. Y.

The Short Line, Inc.
Providence, Rhode Island

Teton Transportation Co.
Victor, Idaho

Transportes Monterey
Monterey, N.L. Mexico

Twilight Bus Line
Red Hook, New York

U.S. Department of Justice
Washington, D. C.

Universal Picture Co., Inc.
Universal City, Calif.

Utica-Clayville Bus Co.
Utica, New York

Valley Bus Lines
Rochester, New York

Vermont Transit, Inc.
Burlington, Vermont

White Motor Co.
Montreal, Quebec, Can.

Welborn Bus Line
Liberty, South Carolina

White Eagle Lines, Inc.
Bogalusa, La.

West Virginia Transp. Co.
Clarksburg, W. Va.

Wasatch Motor Tours
Ogden, Utah

Youth Authority of Calif.
Sacramento, Calif.

Zane Transit Lines
Zanesville, Ohio

THEY GOT BOTH WITH VISICOACH

To check these facts ask the experienced operators listed here who are using Visicoaches, first delivered just 13 months ago.

Look to genuine leather

to make your service more attractive

... help you cut operating costs

Genuine Leather . . . in its wide range of smart colors and interesting grains . . . makes the seating of your buses more attractive . . . more inviting . . . affords your customers a service that reflects your care and thought for their comfort. To these dividends of satisfaction, you add the extras of operating economy that come from the lasting quality of Genuine Leather and

its low upkeep. For Genuine Leather does not collect and hold dirt . . . washes easily with soap and water . . . is fire and stain resistant . . . sanitary and mothproof. Specify Genuine Leather for upholstery of new buses you buy . . . replace worn covering in buses now in service with Genuine Leather . . . and enjoy its exclusive advantages per rider . . . per mile . . . per trip.

THE UPHOLSTERY LEATHER GROUP

TANNERS' COUNCIL OF AMERICA • 100 GOLD STREET • NEW YORK 7, NEW YORK

American Leather Manufacturing Company, Newark, N. J. — The Ashtabula Hide & Leather Company, Ashtabula, Ohio

Blanchard Bro. & Lane, Newark, N. J. — Delaware Tanning, Inc., New York, N. Y. — Eagle-Ottawa Leather Company, Grand Haven, Michigan

The Lackawanna Leather Company, Hackettstown, N. J. — Radel Leather Manufacturing Company, Newark, N. J.

You can do more jobs on a Weaver TWIN POST LIFT * than on any other lift! ...it has NO RAILS IN THE WAY!

Weaver Twin Post Lifts are still unmatched for undervehicle accessibility. They offer *more* in a lift than any other developed . . . *more* working room . . . *more* dependability . . . *more* exclusive features . . . *more* increased production for your shop. It *pays* to install Weaver Twin Post Lifts rather than *any other lift.*

Ask your jobber, or write us, for complete *facts* and time study proof of Weaver Twin Post superiority. Ask for Bulletin BT-457.

*Twin Post Lifts are made by Weaver *exclusively*

- **Greatest of all undercar accessibility permits jobs impossible on any *other lift***
- **Adjustable front post eliminates need for under-chassis rails**
- **Independent post operation offers complete adjustment to job and comfort demands**
- **Either air-oil or electrically operated as desired**
- **Floor is unobstructed when lift is lowered, can be driven over from any direction**
- **Low oil lock assures complete safety in operation**

NEW LOW OIL LOCK . . .

A new development by Weaver engineers, guarantees that lift plungers on any air-oil operated lifts will not be raised on air should oil supply become low. An important safety feature that adds greatly to the life of the lift.

WEAVER MANUFACTURING CO., SPRINGFIELD, ILL., U. S. A.

Tops in QUALITY... Tops in SERVICE

Good mechanics everywhere know that the red-and-black Federal-Mogul box contains the parts they need for *better* engine bearing service.

With more than 7,000 items, Federal-Mogul provides the *complete* engine bearing service: Bearings, bushings, reconditioned and rebabbitted connecting rods, connecting rod bolts and nuts, shims and shim stock.

For quality engine bearings, complete coverage and fast service—*ask your Federal-Mogul Jobber!*

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

BEARING
FEDERAL Mogul
SERVICE

Signs of service—Symbol of Achievement

...FOR TRANSIT PROGRESS

"St. Louis-Built's" consistent history of constructive advertising has had a deeper purpose than competitive promotion of our products alone. Sixty-four years of leadership in the design and improvement of electric powered vehicles have brought nation-wide acceptance of "St. Louis-Built" equipment as standard for excellence. But progress is achieved only step-by-step and the basic objective of each "St. Louis-Built" advertisement is to signalize just one more step, forward. Collectively they represent the true, printed record of Transit Progress.

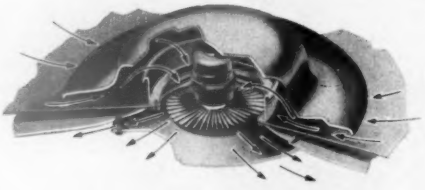
Double Check on Trolley Coaches!
Trolley Buses Making Money
SIGN OF SERVICE...
...SIGN OF DEPENDABILITY
"Food for THOUGHT and ACTION"
TOWARD REDUCING TRAFFIC CONGESTION
Carrying the Crowds...
"St. Louis Built"
St. Louis Car Company
"St. Louis Built" through the years
PROUD RECORD OF PERFORMANCE

St. Louis Car Company

St. Louis, Missouri U.S.A.

the new *Fageol-Liner*

IS AIR-FRESHENED BY
HANS-overhead-SYSTEM



Single fresh-air intake. Capacity 450 CFM. 4½ amperes. Driven by HI-TEMP famous noiseless fan. Available in batteries of 2, 4, 6 and 8 units. Volume up to 3000 CFM. In use in tropical climates for cooling. Simple installation.

L. J. Fageol, President of Twin Coach, and designer of the Fageol-Liner, has made the Hans Overhead System of air-freshening a part of these handsome new coaches.

Country-wide use of over 1,500 units in Twin Coaches during the past two years has proven a big success.

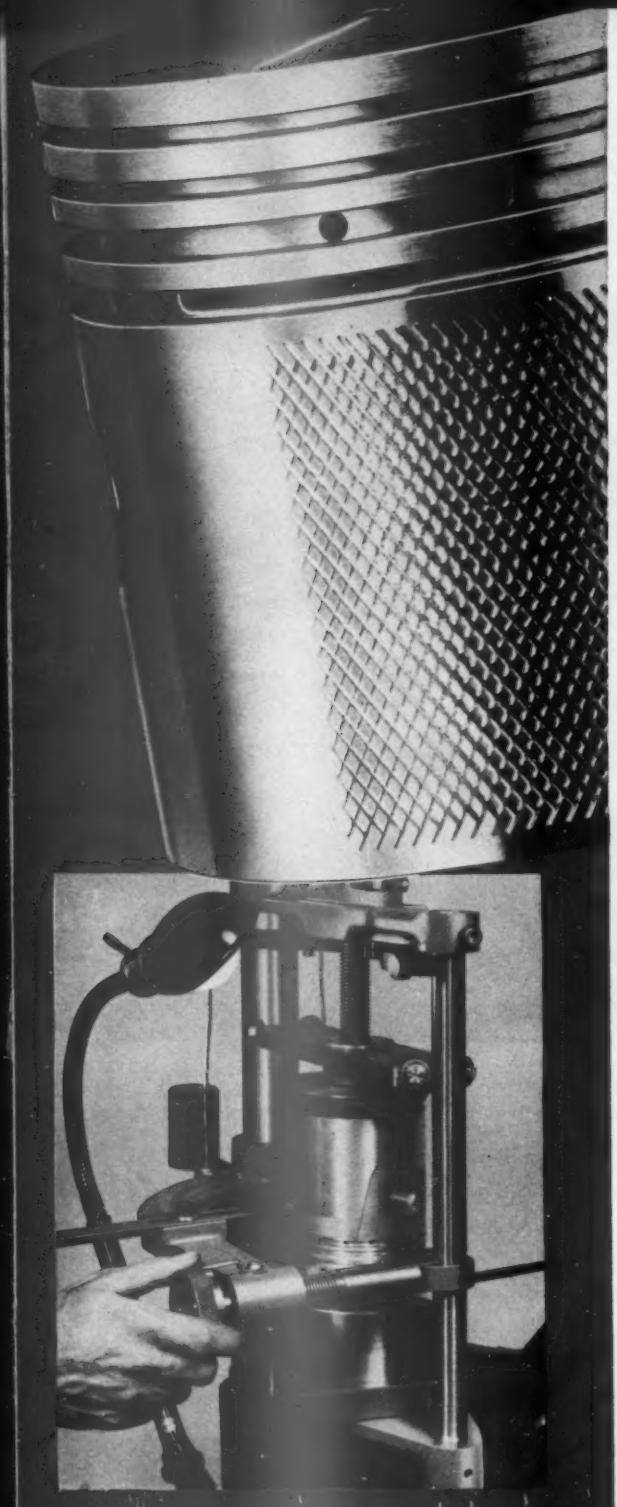
Passengers ride refreshed, **in a clean atmosphere, free from contaminating and nauseating odors. They breathe fresh outside air with nature's full moisture and oxygen content . . . not dried-out, boxed-in, stale air. The pressure-ized effect keeps out exhaust fumes and cold air.**

Ask for information about the Hans Overhead Air-freshening Unit for your coaches. It refreshes in both winter and summer . . . a *year-round feature*. Available for use in city, intercity, school bus, and other vehicles.

Edmund Hans Industries, INC.

10650 Cloverdale, Detroit 4, Mich.

Manufacturer of *HI-TEMP* Winter Heating Systems—Summer Cooling—for coaches and trucks.



SAVE WORN PISTONS
RE-SIZE ALL PISTONS
WITH EXCLUSIVE
HASTINGS

MICRO-KNURLING

● Here's the modern, accurate, convenient piston-expanding service you've been looking for. Hastings Micro-Knurling gives you a better ring job every time. It's available for *all types* of pistons, from 1½" to 6¼" diameter.

Hastings Micro-Knurling saves money, too. It's inexpensive. It enables you to use worn pistons with absolute safety. It assures a smoother-running engine while stretching the life of pistons, rings and cylinders.

Diamond Knurl Pattern Traps Oil

Hastings Micro-Knurling produces an interrupted finish on the thrust surfaces of the piston—giving better, easier break-in and insurance against blow-by and piston slap. Exclusive Hastings Diamond Knurl pattern produces crossed lines which "trap" the oil, assures positive lubrication of pistons, rings and cylinder walls—at all times.

The diamond knurled surface, produced by this resizing service, over a greater portion of the piston, delivers an unusually durable finish. Thousands of installations, studied comparatively, prove this the most permanent method of piston-expanding ever introduced.

For better ring jobs, have new or worn pistons Micro-Knurled. A complete set of pistons can be Micro-Knurled at a modest price—with accuracy produced only by the Hastings machine.

This service is available from most Hastings Distributors.

Hastings Sets the Pace with Micro-Knurling

HASTINGS MANUFACTURING CO.
HASTINGS, MICHIGAN

PISTON RINGS • SPARK PLUGS
OIL FILTERS • CASITE • DROUT

MR. ROBERT D. JONES, *President,*
U. S. Truck Company, Detroit, Michigan,
at his favorite hobby.

"Our major hauling units made more than 60,000 cross-country trips this past year — a total of 3,534,367 miles.

"That kind of heavy, long distance hauling keeps our Maintenance Department on its toes . . . and its equipment specifications very high.

"We expect the batteries we use in our fleet to deliver maximum performance . . . and the Auto-Lite Batteries we've been using for the last three years have never let us down."

AUTO-LITE batteries

THERE IS AN AUTO-LITE BATTERY FOR EVERY USE — CARS • TAXICABS • TRUCKS • BUSES • TRACTORS • DIESEL MOTORS

SUPER REDO IN MTA MOTOR BUS

Now, Boston, too, rides on *GOODALL SUPER REDO*

SUPER REDO IN MTA TROLLEY CAR

SUPER REDO IN MTA SUBWAY CAR

Real economy is the reason for Metropolitan Transit Authority's approval of Goodall SUPER REDO. This heavy-duty vinyl plastic coated fabric is *Blended-to-Perform* to give transportation lines these needed advantages: longer wear, low-cost maintenance, longer lasting beauty.

Super Redo is easy to clean. It is resistant to perspiration, grease, gasoline, and dirt. And it has the added advantage of stay-bright SUNSHINE-TESTED colors. So join the parade . . . do as Boston's Metropolitan Transit Authority did . . . choose from the Goodall selection of handsome grains and colors.

Goodall-Fabrics
THE FINEST NAME IN FABRICS

©1951, Goodall Fabrics, Inc. Subsidiary, Goodall-Sanford, Inc. (Sole Makers of World-Famous PALM BEACH* Cloth) *Registered Trade Mark
GOODALL FABRICS, INC. • NEW YORK • BOSTON • CHICAGO • DETROIT • SAN FRANCISCO • LOS ANGELES

we jack up one thing...

safety!

Your safety's our business. We ride the roads your fleet travels. We check speed, chance-taking, courtesy, hand signals, headlights, tires, reflectors, flares, wiring and every other safe-driving detail from brakes to brains. We follow your trucks and sit in your buses. We take pictures and make reports to you. We ride herd on accidents—*before they happen.*

That's Markel Specialized Insurance Service at work. All very well, but what's the pay-off for you? Lower operating and maintenance costs. *Far fewer accidents resulting in lower insurance costs.* Why not investigate?

MARKEL 4-POINT PLAN

1—A tailor-made insurance program fitted to your individual needs that provides adequate coverage and complete protection.

2—Safety Engineering Service that eliminates causes of accidents.

3—Prompt claim settlements that retain public good-will.

4—Lower insurance costs resulting from our specialized services.

Markel Service is available to you through your own local agent.

MARKEL SERVICE INC.,
Richmond, Va., Dept. BT9
Please send me further details and information about Markel Service.
Name .....
Firm .....
Address .....
.....
My local agent is .....
.....

Look For This Symbol of Safety on Trucks and Buses in the United States and Canada

MARKEL SERVICE INC.

HOME OFFICE: Richmond, Va.

Exclusive Underwriters for the
American Fidelity & Casualty Company, Inc.
The largest stock company in the world specializing in motor carrier coverage

NEW intercity—the IC-41A—for delivery NOW

GOOD NEWS for the transportation industry

NEW SUBURBAN—the SU-37

NEW production facilities! OVER 200 NEW COACHES EACH MONTH NOW WEAR THIS NAMEPLATE .

For over 80 years ACF-Brill has been producing public transportation vehicles . . . from the earliest street cars of the 70's to today's modern buses and trolley coaches.

Here's the last word in intercity transportation . . . the *newest* intercity bus on the market! The IC-41A offers numerous major improvements, yet retains the traditional quality of ACF-Brill construction that has paid off in dependability for so many operators. Notable features include—

MORE BAGGAGE SPACE
both for checked and local hand baggage. In addition to larger parcel racks and underseat baggage accommodations, this new model provides 118 cu. ft. of baggage space in exterior compartments.

INTEGRAL CONSTRUCTION
plus ACF-Brill "know-how" reflects the advantages of more than 20 years' leadership in designing and building specialized heavy-duty intercity equipment.

HALL-SCOTT UNDERFLOOR POWER
for proved dependability. The 220 hp engine is designed for peak performance on either gasoline or LPG fuels.

IMPORTANT REFINEMENTS IN AIR CONDITIONING
including increased cooling capacity and air flow. System driven by main power plant.

HIGHLIGHTS
Good seating for 41 passengers • Clean-cut, restyled interior with new indirect lighting • All side windows sliding and of full-view size • Heat-absorbing glass • Latest design hinged "push out" sash throughout • A good ride with new, long, semi-elliptic springs • 1,800 watt generator • Waterproof ignition system • Single fuel tank of 150 gal. capacity • Dual Carter fuel pumps • 12 cu. ft. compressor, generator and cooling fans, all belt driven • Shorter turning radius with "center point" steering • Mechanical clutch control • Air door control • Accessible windshield wiper engines • 11:00 x 22" tires

All the desirable basic characteristics of ACF-Brill intercity design and construction have been retained.

from ACF-BRILL

ATTRACTIVELY PRICED . . . EARLY DELIVERY!

37 comfortable seats . . . all facing forward. Platform mounting makes all seats equally desirable, including those at wheelhouse locations. Generous seat centers assure plenty of leg room. Lots of baggage space.

Integral body-and-underframe construction for longer life. Easy to handle; maneuverability in close quarters is exceptionally good. Low maintenance costs. Overhead valve engine mounted at rear, easy to reach. Excellent power-to-weight ratio . . . coach weight, ready for the road, only 13,400 lbs.; 162 hp engine. Ample to handle heavy schedules!

. . . a.c.f. BRILL

ACF-BRILL MOTORS COMPANY

Philadelphia 42, Pa. Berkeley, Calif. (Hall-Scott Div.)

(In Canada, it's Canadian Car-Brill)

BUILDERS OF TRANSIT VEHICLES FOR OVER 80 YEARS

Let's Give the Riders a Break!

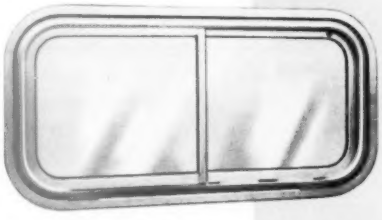
City Transit Sash with new TRANSCO Lock Assembly.

They like the modern appearing, quiet, easy operating, safer

TRANSCO SASH

. . . a break on your budget, too — both on original cost and upkeep. Made of tough, extruded aluminum alloys, you get weather tight, rattle free and positive locking features that make friends of your riders and cut down on maintenance.

Horizontal Sliding Force-Out Safety Sash with Sliding Standee Window.



Intercity Force-Out Safety Sash.

TRANSCO SASH

TRANSPORTATION SASH COMPANY, INC.

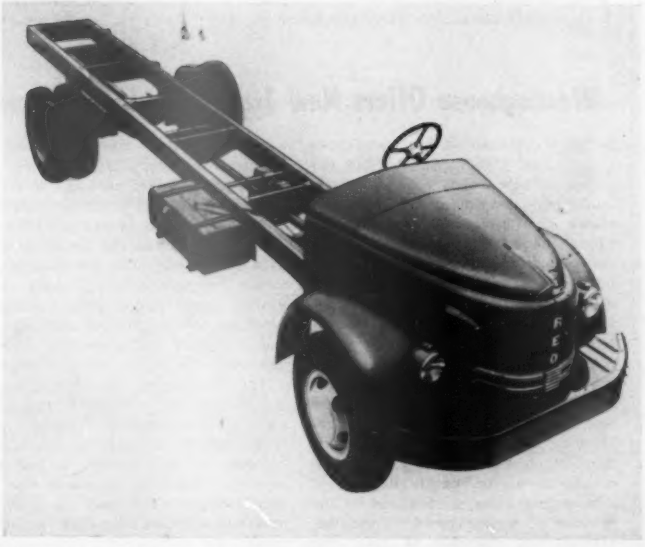
MANUFACTURERS OF TRANSCO SASH FOR THE TRANSPORTATION INDUSTRY

TOPTON, PENNSYLVANIA

The 1951 Bus Show in Print

Continued from page 95

★TRANSIT—Model B 35 PT is a 37-passenger design available for either transit or suburban service. Power source is an International RD 450 gasoline engine.



★SCHOOL—This school bus chassis is powered by Reo Gold Comet engine which is available in three sizes, 255, 292 or 331 cu. in. displacement.

More equipment and accessories on next page

Essential DIESEL TUNING TOOLS
NOZZLE TESTER for Bosch Caterpillar International Harvester Injectors
TEST FIXTURES for GM 71 & 110 Injectors
TEST STAND for Cummins Injectors
COMPRESSION TESTER for all Makes and Types of Diesels
Other Diesel Service Equipment:
• EXHAUST GAS METERS
• NOZZLE CLEANING KITS
• VALVE LAPPING BLOCKS

BACHARACH INDUSTRIAL INSTRUMENT COMPANY
7000 Bonnett Street, Pittsburgh 8, Pa.

Send complete information on your Specialized Diesel Tuning Tools

Name.....

Company.....

Address.....

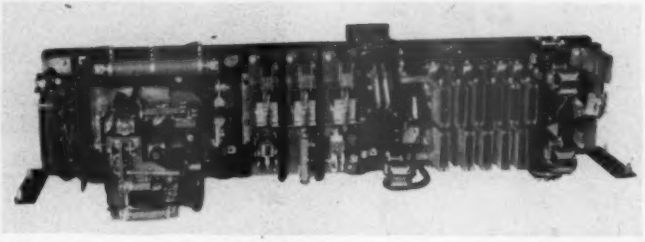
.....

The 1951 Bus Show In Print

Continued from page 227

1951 BUS SHOW IN PRINT
Westinghouse
BUS TRANSPORTATION

★Westinghouse new Super Series 140 hp. traction motor. These are being used on 50 trolley coaches for Cleveland and 53 for Boston.



★Westinghouse Electrocam control equipment is mounted on one panel which is completely assembled, wired and tested prior to installation in trolley coach.

Westinghouse Offers New Trolley Coach Equipment

★THE WESTINGHOUSE Electric Corporation, East Pittsburgh, Pa., has developed a new trolley coach electrical equipment employing a dual-field motor in combination with an improved type of cam control. It is designed to improve even further the high availability and reliability of electrically propelled transit vehicles, and to reduce the already low maintenance expense of the trolley coach.

The 140 hp. traction motor is called the Super Series type. For propulsion it operates as a straight series motor to retain the advantages of superior commutation, freedom from flashing, power economy and low maintenance. An infinite number of accelerating rates, determined by the amount of power pedal depression, permits the operator to start the coach at a rate selected to conform to traffic requirements. This provides the flexibility in operation that is required in city transit service.

The motor also contains a shunt field used only in dynamic braking. A fixed resistance is connected across the armature, and the motor, acting as a shunt generator, provides practically constant braking effort over a wide speed range without resistor notching. Three braking rates are at the option of the operator and are controlled by brake pedal position.

The Electrocam control equipment is mounted on one panel which is completely assembled, wired and tested before shipment to the coach builder. It is designed to require minimum space in the coach side or rear compartment and to provide maximum accessibility for maintenance. An air-operated cam controller is used with spring-closed cam switches which open and close the

accelerating resistor and field shunting circuits. A newly developed power-brake changeover switch is built integral with the cam controller and very materially reduces the number of interlocks. Standard rods from the operator's position connect to the power, brake and reverser shafts of the master controller which is mounted on the main control panel.

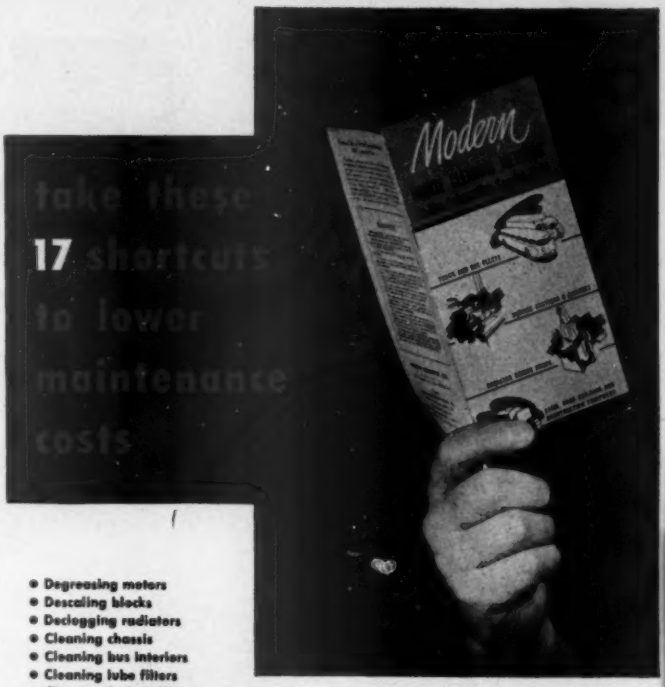
The Super Series motor not only provides smooth notchless dynamic braking but also minimizes the number of operations required of the cam controller. This will effect an appreciable saving in maintenance expense. Fewer contactors and interlocks result in a more simple and rugged control equipment with fewer wearing parts.

Five of these equipments have been in operation for approximately one year on two properties. Based on the reactions from operators as well as maintenance men, this equipment has proved very successful under heavy service conditions. Equipment of this type has been applied to 50 coaches for Cleveland Transit System and 53 vehicles for the Metropolitan Transit Authority of Boston which are currently being delivered.

Seats

★INTERCITY deluxe recliner features removable zipper-fastened slipcovers, body-contour engineering for relaxed position and finger-tip control. KARPEN

★SUBURBAN deluxe Model 3193 features a new streamlined aisle end and a special contour for maximum passenger comfort. KARPEN



- Degreasing motors
- Descaling blocks
- Declogging radiators
- Cleaning chassis
- Cleaning bus interiors
- Cleaning lube filters
- Cleaning fuel oil filters
- Stripping paint
- Reconditioning clutch parts, brake parts, carburetors, fuel pumps
- Washing floors and pits
- Steam cleaning
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You cut fleet out-of-service time—get full value for your maintenance dollar—when you use proved-in-the-shop Oakite materials for these 17 big maintenance cleaning jobs.

Made-for-the-job Oakite materials and methods cut costs by their fast, concentrated action. Help eliminate slow manual scrubbing, brushing, scraping. Minimize fire hazard.

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Titeflex Air Lines

Insure Braking Safety

The air brake has probably done more to increase the safety of trucks and buses than any other device. But an air brake is only as safe as the air line with which it is equipped . . . that is why so many manufacturers have standardized on TITEFLEX tubing for their air brake lines. They know that because of its ALL-METAL construction, TITEFLEX flexible tubing will never rot or deteriorate and is practically a guarantee against air leaks.

Because of its long life and durability, TITEFLEX tubing is also highly favored for oil lines and gas lines in all types of automotive vehicles. TITEFLEX lines pay for themselves many times over in reduced maintenance costs and increased safety. Write for literature describing tough, durable TITEFLEX All-Metal flexible automotive lines—today.

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Exclusive Manufacturers of Titeflex high quality products for more than 30 years

Sales Offices: CHICAGO CLEVELAND DETROIT PHILADELPHIA LOS ANGELES BOSTON SAN FRANCISCO TORONTO

★BODIFORM offset seat made as one unit, permits window passenger to sit well forward of aisle passenger. A five-inch offset permits shoulders to overlap. **AMERICAN**

★BODIFORM No. 1221, a two-passenger unit for transit service designed to provide individual comfort to each passenger. **AMERICAN**

★SUBURBAN No. 1492, a non-recliner available in a variety of upholstery materials. Arm rest on aisle side is upholstered. **AMERICAN**

Budd Wheel Distributors

provide the same service described in this advertisement

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Wheel, Rim & Parts Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHATTANOOGA—Harris Automotive Service, Inc.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.
FARGO—Wheel Service Company
FORT WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Rim & Wheel Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel & Equipment
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robbloes', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robbloes', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robbloes', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Automobile Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

YEARLY TIRE COSTS DOWN $40,000.00

GENUINE Budd COLD TAPERED DISC WHEEL

Available in both standard and lightweight construction.

Here is a direct quote from Roland Heldt, General Manager of Heldt Brothers in Alice, Texas—"Without the savings brought about through the use of Budd wheels we couldn't continue to operate."

Since changing their fleet to Budd wheels, Mr. Heldt goes on, their tire cost has been reduced from $100,000 to $60,000 per year. This tremendous saving through the use of Budd wheels with 5° tapered bead seats has brought Heldt Brothers to the point where they will not accept a new unit unless it is equipped with Budd wheels.

Carl J. Taylor of Southwest Wheel and Equipment, Budd wheel distributor in San Antonio, tells us that Heldt Brothers are engaged mainly in heavy machinery hauling. 50% of this hauling is off the highways . . . through fields and undeveloped roads. During a year they will travel some three million miles.

Carl Taylor's help in recommending the proper wheel-tire combination was instrumental in these savings. He particularly recommended the application of 12:00 x 24 18 ply tires in the rear, and 14:00 x 24 18 ply tires on the front with Budd Heavy Duty Studs and Wheels for their fleet of 16 tandems.

If you find you are not getting your dollar's worth from your tires today, why not call your Budd distributor at the left. He'll be glad to survey your equipment at no cost.

The Budd Company, Detroit 14

★TRANSIT Series 60 seat for two passengers. Foam rubber cushions optional. Baked primer and baked enamel finish. Choice of upholstery optional. **IONIA**

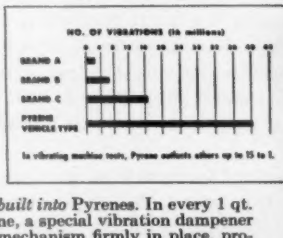
★DRIVER SEAT Series 64 has steel tubing frame mounted on cast aluminum pedestal. Adjustment fore and aft 3⅜ in. Upholstered in leather, mohair, Koroseal or artificial leather. **IONIA**

GET TWICE
—or more—
THE SERVICE LIFE
of ordinary Vaporizing Liquid Extinguishers
WITH SPECIALLY CONSTRUCTED PYRENE
VEHICLE TYPE EXTINGUISHERS

When you want facts about the effect of vibration on a fire extinguisher, you put it in a vibrating machine.

In competitive vibrating-machine tests, a Pyrene* Vehicle Type Extinguisher outlasted three other major brands by more than 2 to 1 . . . the ratio going as high as 15 to 1. (Chart shows details.)

You never need worry about vibration when you use a Pyrene Vehicle Type Extinguisher! Twice the service means half the cost.


NO. OF VIBRATIONS (in millions)
0 5 10 15 20 25 30 35 40 45 50
BRAND A
BRAND B
BRAND C
PYRENE VEHICLE TYPE
In vibrating machine tests, Pyrene outlasts others up to 15 to 1.

This extra life is *built into* Pyrenes. In every 1 qt. and 1½ qt. Pyrene, a special vibration dampener holds the pump mechanism firmly in place, protecting it against both vertical and horizontal vibration. And tough brass linings guard the valve housings in every spot where wear could occur. No other extinguisher offers these vital added construction safeguards.

Lower price doesn't pay when you get half the life. Buy on facts . . . buy Pyrene!

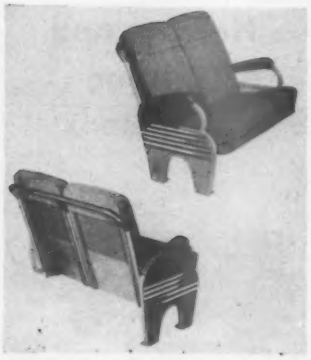
*T.M. Reg. U.S. Pat. Off.

Pyrene
FIRE EXTINGUISHERS

PYRENE MANUFACTURING COMPANY
590 Belmont Avenue — Newark 8, New Jersey
Affiliated with C-O-Two Fire Equipment Co.

★TRANSIT Model UT-250-M-2 staggered seat with stainless steel griprail and painted or Rigidized steel back. Seat filler and covering optional. **NATIONAL**

★TRANSIT Model UT-227-B-1 double seat with stainless griprail and painted or Rigidized steel back. Spring or rubber cushion with covering optional. **NATIONAL**



★SUBURBAN or Sightseeing seat Model PT-130-E with foam-rubber-filled cushions and backs. Backs are recessed at rear for leg-room. **NATIONAL**

★INTERCITY recliner Model TR-150 has newly designed armrest and pedestal, individual sliding cushions. Back release is at front of arm cap. Cushion and back covers are removable and zipper equipped. **NATIONAL**

★DRIVER SEAT No. 250 has adjustments for depth, height, fore-and-aft as well as cushion and back. Ventilated seat has springs or rubber for maximum comfort. **AMERICAN**

COSTS ROLL DOWN

When KINNEAR DOORS Roll Up

They save SPACE — by opening straight up and coiling above the doorway, allowing floor and wall space around the door to be used at all times.

They save TIME — with smooth, easy gliding action. With motor operation, doors can be motor controlled from any number of conveniently located push-buttons.

They save MONEY — rugged, all-steel, interlocking slat curtain assures long life, low maintenance, and extra protection against fire, intrusion and wind damage.

Every Kinnear door is specially fitted to the individual opening, in old or new buildings. Cannot interfere with traffic or other plant activity. When opened, it stays neatly above lintel, out of reach of damage. The Kinnear door's capacity for years of hard, uninterrupted use under the most difficult conditions has been proved by a half century of service.

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Factories: 3050-70 Fields Ave., Columbus 16, O.
1742 Yosemite Ave., San Francisco 24, Calif.
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Saving Ways in Doorways
KINNEAR ROLLING DOORS

★INTERCITY Non-recliner No. 70 has welded cold rolled steel frame with grab rail of stainless steel, chrome or baked enamel. Springs covered with flexolator and pad. Foam rubber cushions optional. Choice of leather, mohair, Koroseal or artificial leather. **IONIA**

GUNITE

HEAT-TREATED, HEAVY-RIBBED

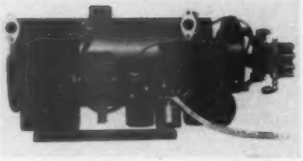
BUS BRAKE DRUMS

Designed to give superior, silent service under severe stop-start, stop-start bus usage. See your local Gunite Distributor. He has Gunite Heat-Treated Bus Brake Drums in stock or will order immediately for you.

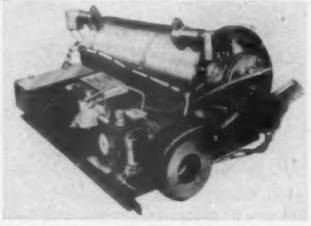
GUNITE FOUNDRIES CORPORATION

Rockford • Illinois

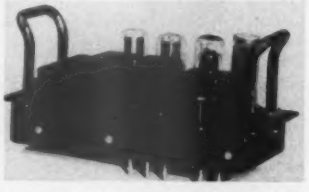
Heating and Lighting Equipment



★FLUID HEAT fully automatic, self-contained hot water heating unit with output of 75,000 BTU per hour. Heater is complete package which includes all controls, water jacket, heat exchanger, firing head, motors, blowers and pumps. Available in 12, 24, 32, 64 and 110 volts dc and 110 volts ac. **ANCHOR POST**



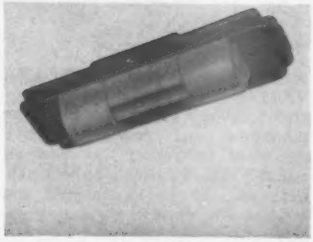
★BOOSTER HEATER operates on diesel fuel or gasoline. Design has been simplified for quick removal of components and sub-assemblies for easy, economical maintenance. **JANITROL**



★ELECTRONIC RELAY especially adapted to use in an electronic air-conditioning control circuit with a modulating motor driving the final control element. **MINNEAPOLIS-HONEYWELL**

★ELECTRONIC THERMOSTAT known as "Ductostat" is for use in commercial air-conditioning control systems where unusually sensitive measurement and control of temperature are desired. **MINNEAPOLIS-HONEYWELL**

★PARKING LOT HEATER designed to keep ten buses warm at ten below zero at less than cost of idling one. Has capacity of 250,000 BTU per hour. Operates on #1 or #2 diesel fuel with maximum rated consumption of 1.85 gal. per hour. Operation is automatic and heater starts when outside temperature drops to danger point. **VAPOR HEATING**



★Lensed center light is designed to put a high intensity beam of light in aisle so that none of it spills over into passengers' eyes. **LUMINATOR**

★KEYSTONE Fluorescent lighting fixtures to create bright and inviting interiors in buses and street cars. **ELECTRIC SERVICE**

BRUNNER AIR COMPRESSORS

"We have always felt that Brunner Air Compressors offered the biggest dollar value in performance, dependability and service life but...

don't take our word for it...

Most Brunner customers 'sold' themselves by making point by point comparisons. Obviously, we'd like to see you depending upon Brunner Compressed Air too and for that reason invite your request for a Brunner catalog as the first step in getting acquainted."

J. W. THOMAS
Sales Manager

A. D. SULLIVAN
Chief Engineer

SEND IT. I'd like to see and read the reasons why Brunner Air Compressors are so popular with other men responsible for watching costs as well as the efficient maintenance and service of bus fleets.

Name

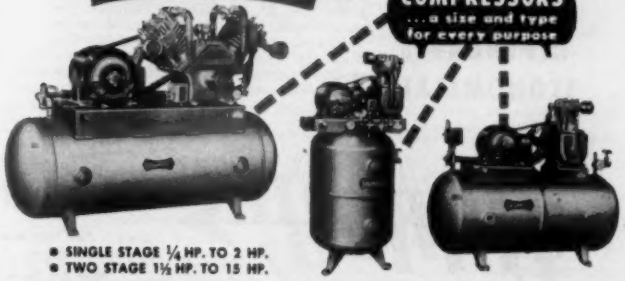
Company

Address City and State

BRUNNER MANUFACTURING COMPANY, UTICA 1, NEW YORK, U. S. A.

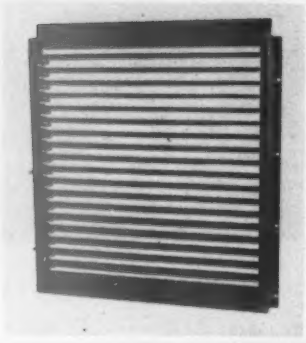
BRUNNER SINCE 1906

AIR COMPRESSORS ...a size and type for every purpose



• SINGLE STAGE ¼ HP. TO 2 HP.
• TWO STAGE 1½ HP. TO 15 HP.

BRUNNER AIR COMPRESSORS *have been in automotive service for 45 years.*



★Radiator shutters in standard and custom-built designs have automatic controls to maintain correct engine temperatures under varying climatic condition. **KYSOR**

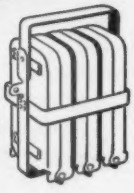
NEW

ARROW REFLECTO-FLARE

FOR TRUCKS AND BUSES

Designed by Arrow!
Made by Arrow!
Meets all ICC and State Requirements!

MODEL N170 Set of three flares and handy carrier for mounting in cab.



COMPACT
SAFE
DEPENDABLE
ECONOMICAL

Visible at night for more than half a mile. Exceeds ICC requirements; approved by Underwriters' Laboratories. Shatterproof red reflex lens, 3" in diameter. Baked-on red enamel finish. Set of 3 in convenient carrier weighs only 5 lb., occupies a space only 8" x 4" x 4½". An Arrow "safety after dark" product... designed for long life and trouble-free performance.

ARROW
SAFETY AFTER DARK

Arrow Safety Device Company
Mount Holly, New Jersey

★AUTOMATIC HOT WATER VALVES for bus operation. Air-operated by-pass type replaces engine thermostat and provides positive means of controlling flow through radiator. Also applicable as heat control valve. An electric solenoid and air-operated straight through types are used as heater control valves. **VAPOR HEATING**

★Step and farebox light mounts in vehicle ceiling and can be adjusted to direct illumination either on fare box or in entrance step well. **LUMINATOR**

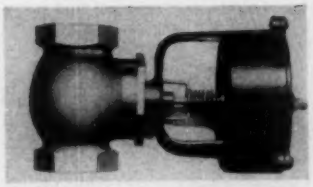
★ELECTRONIC DUCT Thermostat for use in electronic control circuit where extra-sensitive measurement of control and temperature are required. **MINNEAPOLIS-HONEYWELL**

★ENGINE TEMPERATURE Thermostat for installation in hot water lines. The sensitive element is small enough to permit installation across standard pipe lines as small as 2-in. dia. **MINNEAPOLIS-HONEYWELL**

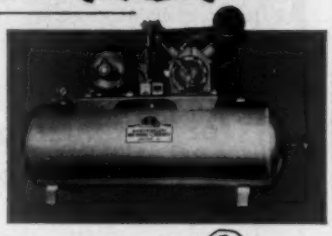
★Fluorescent lighting designed to provide glareless, shadowless lighting in modern transit vehicles. Better light for reading and greater aisle safety contribute to passenger comfort. **LUMINATOR**

★DESTINATOR destination signs feature sharply defined printing and clean-cut background through use of a new printing process. A non-ratchet clutch speeds operation. **ELECTRIC SERVICE**

★PNEUMATIC COIL VALVES. These air-operated valves control the flow of fluids or gases in conjunction with pneumatic control systems. **MINNEAPOLIS-HONEYWELL**



KNOCK THAT "R-E-P" OUT OF YOUR AIR SUPPLY with a



Westinghouse "Y" Compressor

When you buy a new compressor—be sure you get just A-I-R and not *R-E-P*-A-I-R. That "R-E-P" is the costliest part of your air supply.

The Westinghouse "Y" is designed to ban the greatest single cause of repair bills—failure to oil. When the oil level in the "Y" gets too low, the compressor refuses to load. This forewarning lets you take care of lubrication before any damage results. The "Y" unloads if the oil level drops during operation.

Westinghouse "Y" compressors offer every modern feature,—automatic pressure control, pressure lubrication, multiple "V" belt drive, fully enclosed crankcase,—plus the three protection-features listed at right. Full range of sizes. 6.2 to 68 CFM displacement, 1½ to 15 hp., horizontal or vertical tank. Gas engine drive also available.

You can't afford to gamble on uncertainties today . . . be sure of a dependable, economical air supply, with a Westinghouse "Y".

Only the Westinghouse "Y" gives you ALL THREE

Low Oil Level Protection—No Oil—No Air, bans wear and repair.

Thermal Overload Protection—Standard, at no extra cost, on the "Y".

Starting Unloader—Compressor remains unloaded till speed and oil flow are normal.

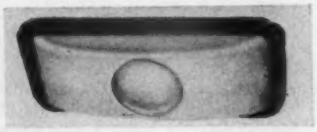
Westinghouse Air Brake Co.

Industrial Products Division—WILMERDING, PA.
Factory Branch: EMERYVILLE, CALIFORNIA

ASK FOR BULLETIN IDC 9302-3.

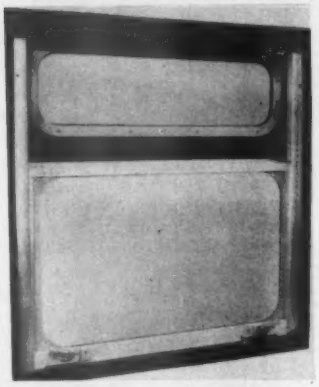
DISTRIBUTORS THROUGHOUT THE UNITED STATES . . . CONSULT YOUR CLASSIFIED DIRECTORY
DISTRIBUTOR IN CANADA: CANADIAN WESTINGHOUSE CO., LTD., HAMILTON, ONTARIO

★Twin-beam reading light for intercity vehicles designed to permit reading by either passenger in double chairs. **LUMINATOR**

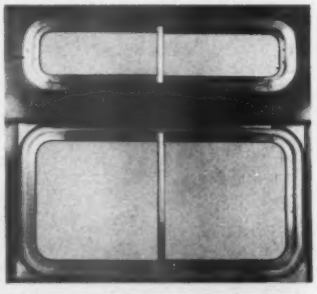


★**BALANCED BAND LIGHTING** is designed to provide uniform lighting throughout the vehicle interior with only one type of incandescent fixture. Broad bands of light of even intensity cover entire seating area. **ELECTRIC SERVICE**

Window Sash



★For transit service, raised sash is full-floating, self-aligning, positive-locking with finger-tip control. It is made of extruded aluminum alloys. **TRANCO**



★For intercity service, a horizontal sliding sash of the forceout type. Standee windows also slide for extra ventilation. **TRANCO**

★Sliding type sash features ease of operation, individual ventilation control and high visibility. **O. M. EDWARDS**

THE TREND IS TO
SHOCK ABSORBERS

for minimizing maintenance on springs and front end assemblies

Now more buses come factory equipped with shock absorbers . . . More fleet operators install shocks on all types of equipment in all kinds of service. Every dollar saved on maintenance goes into the profit side of your ledger. That's why Gabriel shock absorbers are definitely a profitable investment. They drastically reduce spring breakage, front end overhaul and all types of maintenance traceable to road shock. Now packaged complete with brackets, installation is simplified. Write for your copy of Gabriel Truck and Bus Shock Absorber Catalog today.

THE GABRIEL COMPANY
1523 EAST 45th STREET
CLEVELAND 3, OHIO

GABRIEL
TRUCK & BUS
SHOCK ABSORBERS

★A deluxe intercity coach equipped with an Edwards closure. The sash is made of extruded aluminum alloys. **O. M. EDWARDS**

★12-volt electric door operator for motor and trolley buses. Requires same space as universal air-operated door engine. It can be used with standard interlock equipment. **NATIONAL PNEUMATIC**

Fare Collection

★Model K-9 automatic fare box features automatic inspection, fare segregation, flexibility and an increase in registration speed of 50 per cent. **JOHNSON**

Door Operators

★Designed to open bus doors in less than one second, this door operator works on 1,000 hydraulic pressure. It requires somewhat less installation space than the C-17000 door engine. **NATIONAL PNEUMATIC**

This NEW BOOKLET WILL $AVE DOLLAR$ FOR SUNNEN EQUIPPED SHOPS . . .

Because materials are short and costs are high . . . now, more than ever before, anything you can do to make supplies and equipment last longer is good news to your cash register.

This new booklet is full of ideas and suggestions on how to operate Sunnen equipment more efficiently, and make Sunnen supplies go farther. It can mean considerable savings in your shop.

Write for Your Copy of "SUNNEN SERVICE HINTS"

SUNNEN PRODUCTS COMPANY
7912 Manchester Avenue, St. Louis 17, Missouri
Canadian Plant: Chatham, Ontario

427

ATTWOOD-*built hardware lasts miles longer*

Turn your bus hardware specifications into beautiful, durable finished products by sending them to ATTWOOD. Behind every piece of ATTWOOD Bus Hardware is the skill and knowledge of fifty years experience in custom fabricating field. And too, ATTWOOD gives you a selection of over two thousand standard designs.

Write for your copy of the New Attwood Automotive Hardware Catalog No. 25. There's no obligation of course.

"Four out of five leading bus manufacturers specify ATTWOOD hardware and trim."

ATTWOOD
BRASS WORKS
GRAND RAPIDS 4, MICHIGAN

Write to 846 Front Ave., N.W., Grand Rapids 4, Michigan

Clean Engines and Chassis... *More Thoroughly – Faster!*

For Less Than $35.00 . . Enough to clean 120 Engines and Chassis.

There's a simple, inexpensive way to clean engines and chassis—far superior in every way to the messy job of trying to blast off greasy dirt with a steam gun. And it doesn't involve buying expensive equipment, either. The answer is

MAGNUSOL

For less than $35 you get enough Concentrated Magnusol to clean 120 engines, plus the Magnus Sprayer you need to apply the cleaner. You simply spray on . . . let soak . . . rinse off with pressure stream of water. No attack on paint or metal. No unpleasant odor or fumes. No fire hazard. No waiting for heat. And a perfect cleaning job to boot!

TRIAL OFFER

Send us your order for 15 gallons of Magnusol and the Magnus Sprayer. Your bill will be less than $35.00, and if you are not satisfied with the job done at the end of 30 days, you'll get the entire amount back.

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In Canada — Magnus Chemicals, Ltd., Montreal.
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CLEANERS • EQUIPMENT • METHODS

★ **CONSOLIDATED CAR HEATING CO.** features new products which include an electric door operator for trolley coaches and buses. It is designed for compactness and low current consumption.

A new unit to control speed of overhead fans in PCC and rapid transit cars assures stepless control and does not require resistors in fan motor circuit.

A newly designed treadle which features simplicity, reduced possibility of failure and ease of inspection and maintenance.

PERSONALS

Continued from page 106

New manager of the Sacramento system is **R. W. Mallory,** former manager of San Jose City Lines. Mr. Mallory has been with the company for many years, managing Bellingham, Wash. and Butte, Mont. lines.

CLAYTON S. STEEL has been appointed assistant manager of the Portsmouth, Va., Transit Co. Before his appointment he had served as division engineer for the Virginia Transit Co.

Mr. Steele is a graduate of the University of Illinois. In 1941 he entered the Army, and was discharged in 1945 with the rank of colonel. He returned to Chicago Surface Lines as a research engineer, where he stayed until his appointment as division engineer with VTC.

JOHN R. STOKES has been named terminal manager at Ann Arbor, Mich., and supervisor of the Ann Arbor City Lines, owned and operated by Great Lakes Greyhound Lines, Inc.

John Hagen, who has served as terminal manager in Ann Arbor for the past several years, has been shifted to Kalamazoo, Mich., where **James McGraw,** supervisor of city operations, has resigned.

Mr. Stokes was formerly terminal manager at Muskegon, Mich., and had been in charge of the Kalamazoo station since 1949.

FRED STRONG, a public relations counselor and formerly a St. Paul newspaperman, has been named director of public information for the Twin Cities Rapid Transit Co., Minneapolis.

A. C. WEINSTOCK has joined Trailways of New England as manager of operations. He was formerly regional manager for New England Greyhound Lines.

OBITUARIES

JOHN C. BOWLES, 49, equipment superintendent of Community Traction Co., Toledo, Ohio, died recently of a heart ailment.

Mr. Bowles joined Community Traction in 1927 as garage foreman. Later he served as garage superintendent. He was a member of the Toledo Industrial Safety Council.

FRANK C. COUR, 61, purchasing agent of the Public Service Co., of Indiana since 1929, died recently in Indianapolis. Before joining the utility, he was purchasing agent of the Fort Wayne & Northern Indiana Traction Co., from 1916 to 1929, and prior to that was with the Fort Wayne and Wabash Valley Traction Co., which he joined in 1909.

RAYMOND H. FINDLEY, 67, associated with the Omaha & Council Bluffs Street Railway Co. since 1909 and its chief engineer since 1927, died recently at his home in Omaha.

He was born in Fremont, Ohio, and came to Omaha in 1888. He was graduated from the University of Nebraska in 1908 and joined the street railway company as an engineer a year later.

ARTHUR DAVID HARTSELL, 67, a pioneer in the transit business on the west coast of Florida, died recently in Clearwater.

In 1917, Mr. Hartsell organized the White Stage line formerly operating from St. Petersburg to Tampa, and in 1931 he organized the Gulf Coast Motor Lines, selling his interests in 1944. Born in North Carolina, he had resided in Florida since he was 15 and had lived in Clearwater since 1936.

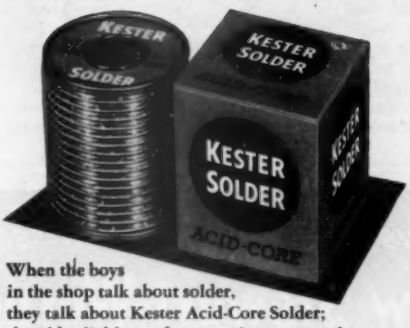
ELVIN L. HOSSLER, 68, superintendent of transportation for the Wilkes-Barre Transit Corp., died recently at his home.

EMORY VIRGIL LESTER, traffic superintendent of Twin City Lines, Inc., Fort Smith, Ark., died recently.

MRS. EVA ZRINSKY died recently at her Newark, N. J., home. She was 66 years old.

Mrs. Zrinsky, widow of Emre Zrinsky, owned and operated the Van Buren Bus Co. after her husband's death six years ago.

Kester Solder



When the boys
in the shop talk about solder,
they talk about Kester Acid-Core Solder;
the old reliable product now in a new package.

Easier to Use

Mechanics know that using Kester makes any soldering job easier. Kester contains the finest grades of tin and lead commercially available. The fluxes are chemically and scientifically correct.

Faster

Kester is faster to use. Mechanics prefer it and are more satisfied when using it. The work is speeded up and output is increased.

Kester Solder Company
4201 Wrightwood Ave., Chicago 39
Newark, N. J. • Brantford, Canada

KESTER SOLDER

The Mechanics Standard since 1899

News of Manufacturers

Continued from page 108

Both the aircraft and bus manufacturing divisions of the company operated at a profit during the six month period, according to L. J. Fageol, president. Sales increased 100 per cent to $15,633,000 as compared to $7,693,000 last year.

Substantially higher sales are anticipated during the last half of this year, according to Mr. Fageol. Production is just getting under way on a large U. S. Army order for 1,509 "Convertible" bus-trucks and it is anticipated that the majority of these will be delivered before the end of 1951. The company recently negotiated a $9 million bank credit agreement to finance this and other defense production contracts.

* * *

British Columbia Electric Co. has been running five propane converted Twin Coach buses up and down hills in North Vancouver on regular schedules to test the use of propane gas as a substitute for gasoline—and now they've come up with the verdict of "considerable success" in running economy and efficiency.

The five buses, some of which have traveled upwards of 23,000 miles, have shown a slight increase in power and a noticeably smoother, more responsive operation compared with vehicles using gasoline.

From the economy standpoint, the company reports the propane buses have shown about 30 per cent less oil consumption, with an increase of about 10 per cent in fuel consumption.

The results of the test are apparently good enough to lead company officials to consider the possibility of converting the nearly 300 gasoline buses in the greater Vancouver area to propane.

SAMUEL MOORE & CO., manufacturers of Dekoron coated instrument tubing, has announced the appointment of Industrial Equipment Co. as sales representative and distributor for the area made up of West Virginia, less the panhandle, and the Ohio and Virginia counties bordering West Virginia.

* * *

A new caulking compound, Rub-Bub Chromated Caulk, formula 1-ZB, has been announced by Samuel Moore & Co. The company says it stays pliable indefinitely. The new compound succeeds Rub-Bub Chromated Rubber Caulk, now discontinued.

* * *

PUROLATOR PRODUCTS, INC., Rahway, N. J., has announced the appointment of Frederick P. Babcock as permanent Washington representative. Mr. Babcock took up his duties for the company, which makes oil filters and other oil filtration equipment, on Sept. 1.

WESTINGHOUSE ELECTRIC CORP. has developed a new incandescent lamp which resembles the picture tube of a small television set.

The 800-watt, seven and ⅛-inch maximum diameter lamp will burn an average of 1,500 hours, or about four months on a two-shift operation. The regular 700-watt light bulb, which the new lamp is designated to replace on many operations, burns an average of 1,000 hours. A standard mogul screw base allows operation in existing sockets.

WALKER MANUFACTURING CO. has announced two changes in its field sales organization:

Gene Hartnett, who has served as a home office specialist on the company's line of automotive filters and replacement cartridges, has been promoted to district filter sales representative for the Illinois-Michigan area.

Replacing him on the home office staff will be **Einar C. Lovgren** who

Continued on page 245

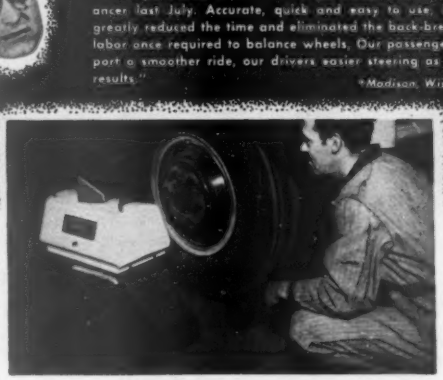
Bus Line President Praises

New Stewart-Warner *Electronic* Wheel Balancer!

Here's what Mr. H. E. Meier, President of the Badger System*, says:

"We purchased a Stewart-Warner *Electronic* Wheel Balancer last July. Accurate, quick and easy to use, it has greatly reduced the time and eliminated the back-breaking labor once required to balance wheels. Our passengers report a smoother ride, our drivers easier steering as direct results."

*Madison, Wisconsin



JOHN OLSON checks the left front on one of the modern buses in the Badger System fleet.

In minutes, this new *Electronic* Wheel Balancer checks single or dual, front or rear wheels—*in true, running position!* You avoid costly repairs, replacements and "downtime" *in advance!* And you increase greatly tire mileage—so important in the light of current restrictions, shortages.

Vibrations and pounding on front-end assemblies, tie rods and bushings are eliminated—without removing the wheels from the vehicle. Degree of unbalance is quickly, accurately registered up to 2/1000 of an inch by this easy, Electronic method.

Write today for complete *free* information on this easy-to-use unit, produced by Stewart-Warner only. Address Dept P 91 for rapid reply.

Stewart-Warner Corporation

Dept. P-91, 1826 Diversey Parkway, Chicago 14, Illinois

Hugs tight!

Want upholstery that hugs tight—that fits like a glove? Get Lumite fabric! Upholsterers work wonders with it because it's easy to fold, shape, cut, sew. And it holds its original snug fit, because it can't sag, stretch, wrinkle or cup, when properly installed. If you're looking for the fabric that "keeps fit" . . . look into Lumite fabric!

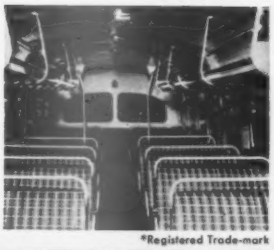
LUMITE* *woven* SARAN *fabric*

● **Tough!** Scuff-resistant. Can't rot or mildew and it's non-inflammable. Not even battery acid can harm it.

● **Comfortable!** The weave "breathes"—lets air circulate freely. Assures year around seating comfort—cool in summer, never clammy in winter.

● **Stays Trim!** Is easy to fold, shape and cut. Keeps its glove-snug fit—can't sag, stretch, wrinkle or "cup" when properly fitted and installed.

● **Less Maintenance!** Lumite fabric is unaffected by all ordinary stains . . . may be cleaned with a cloth or brush dampened with soapy water or cleaning fluid.



*Registered Trade-mark

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For **FREE** fabric sample and descriptive literature, write — Dept. BT-51

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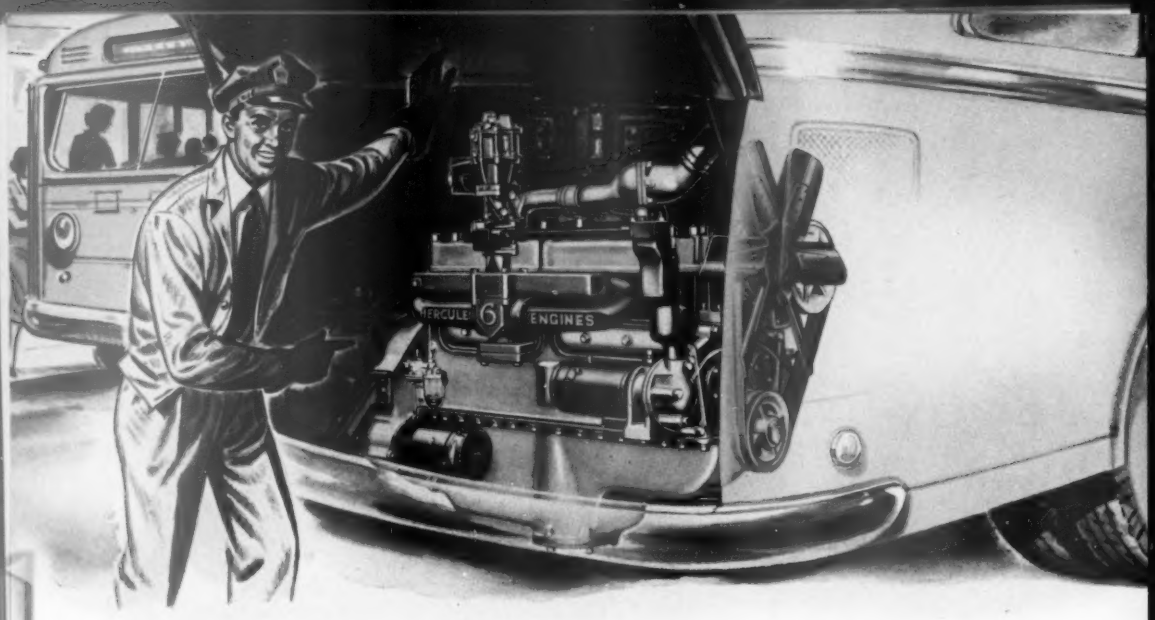
Chicopee Mfg. Corp. of Georgia,
40 Worth Street, New York 13, N. Y.



"and in the

BUSINESS END *of my bus* .... HERCULES!

"HERCULES ENGINES 3 to 500 H. P."

GAS AND GASOLINE ENGINES

Model	Bore and Stroke	Cu In Displ
Two Cylinder		
BXB	2½" x 3"	39
NXA	3" x 4"	56.5
NXB	3¼" x 4"	66.3
Four Cylinder		
ZXA	2½" x 3"	59
ZXB	2⅝" x 3"	65
IXA	3" x 4"	113
IXB	3¼" x 4"	133
IXLB	3¼" x 4¼"	141
JX4E	3⅜" x 4¼"	164
JX4C	3⅜" x 4½"	188
JX4D	4" x 4¼"*	214
Six Cylinder		
QXA	3¼" x 4½"	190
QXB	3¼" x 4¾"*	205
QXC	3⅜" x 4¼"	221
QXLD	3-7 16" x 4½"	236.7
JXE	3½" x 4¼"*	245
JXB	3⅜" x 4¼"	263
JXC	3¼" x 4¼"	282
JXD	4" x 4¼"	320
JXLD	4" x 4½"	339
WXC-3	4¼" x 4½"	383
WXLC	4" x 4¾"	358
WXLC-3	4¼" x 4½"	404
TDXB	4⅜" x 5¼"	474
RXB	4½" x 5¼"	501
RXC	4⅝" x 5¼"	529
RXLC	4⅝" x 5½"	529
RXLD	4⅝" x 5¼"	558
RXLDH	4⅝" x 5¼"	558
HXB	5" x 6"	707
HXC	5½" x 6"	779
HXD	5½" x 6"	855
HXE	5⅝" x 6"	935

DIESEL ENGINES

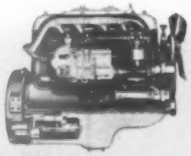
Model	Bore and Stroke Inches	Piston Displ Cu In
Two Cylinder		
DIXC	4" x 4½"	113 1
DIXD	4½ x 4½"	127.3
Four Cylinder		
DIX4B	3¼" x 4"	133
DIX4D	3⅝" x 4"	166
DOOB	3⅝" x 4½"	198.8
DOOC	4" x 4½"	226.2
DOOD	4½" x 4½"	255
Six Cylinder		
DIX6D	3⅝" x 4"	249
DJXB	3½" x 4½"	260
DJXC	3⅝" x 4½"	298
DJXH	3⅝" x 4½"	298
DJXHF	3⅝" x 4½"	298
DWXC	4" x 4⅝"	358
DWXD	4¼" x 4⅝"	404
DWXLD	4¼" x 5"	426
DWXLDF	4¼" x 5"	426
DRXB	4⅝" x 5¼"	474
DRXC	4⅝" x 5¼"	529
DFXB	5" x 6"	707
DFXC	5¼" x 6"	779
DFXD	5½" x 6"	855
DFXE	5⅝" x 6"	893
DFXH	5⅝" x 6"	935
DFXHF	5⅝" x 6"	935
Eight Cylinder		
DNX V-8C	6" x 6"	1348
DNX V-8D	6¼" x 6"	1468
DNX V-8DS	6¼" x 6"	1468

Hercules POWER UNITS are available, equipped with any of the above engines

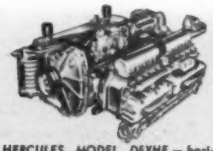
Busses are big business . . . and Bus Line Operators from coast to coast are quick to vouch for the important part dependable Hercules Diesel, Gasoline and Butane-Propane Engines play in maintaining schedules and producing bus line profits.

Now, with stepped-up travel activities . . . and American economy again entering a period of short supply . . . bus operators, who benefited from past experience, are placing a new value on the name HERCULES. They know you can look to Hercules for: (1) the traditional, top-quality construction which means low operating cost . . . LONGER LIFE . . . and minimum maintenance plus (2) a choice of gasoline, diesel or butane-propane powers. With Hercules, you are sure to have the engine best suited to your requirements.

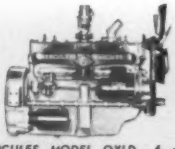
Plan tomorrow's power requirements today! Hercules engineers stand ready to assist you . . . and, of course, there is no obligation.



HERCULES MODEL DRXC — 6 cylinder diesel engine, 4-⅝"x5-¼", 529 cubic inch piston displacement, develops 147 h.p. at 2200 r.p.m.



HERCULES MODEL DFXHF — horizontal type 6 cylinder diesel engine, 5-¾"x6", 935 cubic inch piston displacement, develops 260 h.p. at 2100 r.p.m.



HERCULES MODEL QXLD — 6 cylinder gasoline engine, 4"x4½", 339 cubic inch piston displacement, develops 121 h.p. at 2600 r.p.m.

HERCULES MOTORS CORPORATION, *Canton, Ohio, U. S. A.*

News of Manufacturers

Continued from page 242

joins Walker after 14 years' experience in hardware sales and hotel management. Mr. Lovgren will make his headquarters at the company's home office in Racine, Wis., and will conduct district sales meetings and dealer sales programs throughout the country.

RUBBER MANUFACTURERS ASSOCIATION, INC., says that new rubber consumption during the month of July decreased 8.3 per cent in 98,249 long tons from the 107,135 long tons consumed in June.

Consumption of both natural and synthetic rubber was down during the month of July, said the Association in its monthly report.

THERMOID COMPANY, Trenton, N. J., has introduced a new Neoprene bus and truck radiator hose which the company's engineers claim offers four times greater resistance than ordinary hose to oil, grease and gas fumes. Tests indicate that the new hose will withstand 100 degrees Fahrenheit higher ambient temperature than ordinary hoses.

Specifications include: an inner tube of 3/32nds of an inch thickness compounded from Neoprene. Reinforcement consists of woven fabric frictioned on both sides with a Neoprene compound and plied on a 45 degree bias.

It is available in all standard sizes up to and including one and ¾ inch ID, two-ply construction, wall thickness 3/16ths of an inch.

JOHN H. SMITH, president of the Smith-Moore Body Co., Richmond, Va., has announced that his company has been appointed a distributor in Virginia for Superior Coach Corp., Lima, Ohio.

HENRY OLDHAM has been named consultant for the foundries of Hunt-Spiller Manufacturing Corp., Boston. Hunt-Spiller is a producer of heavy-duty brake drums. Succeeding Mr. Oldham as superintendent of foundries is **William E. Mulcahy.**

R. L. POLK & CO., Detroit, statisticians for the automotive industry, says that the downtrend which has marked automotive registrations since May of this year continued through July. It is expected that July registrations will total approximately 450,000 new passenger cars. This compares with 454,665 for June and 470,446 for April.

The first six months of the year ended with a grand total of 2,808,586 new cars registered.

The truck industry, however, compiled a record during its first six months of 1951, when 515,975 new trucks were registered, as compared with 510,428 new trucks registered during the first half of 1950, which previously had been the high record.

STEPHEN J. GEOHEGAN has been appointed vice president in charge of materials control of the Industrial Tape Corp., a subsidiary of Johnson & Johnson, New Brunswick, N. J.

Mr. Geohegan, who has been with Industrial Tape since 1943, was director of the materials control division prior to his appointment as vice president. He has been a director of the company since 1947.

THOMAS E. WILSON has been appointed production manager of the GMC Truck & Coach division.

In his new capacity Mr. Wilson will be responsible for the production, purchasing and traffic activities of the division. He joined the GMC Truck and Coach division in April, 1942, as labor relations supervisor, and in

Continued on page 246

AT THE REAR WHEELS ... under road load conditions duplicated by the Clayton C-61 heavy duty truck and bus dynamometer ... increased horsepower is translated into savings on fuel, fewer repair lay-offs and better maintenance of schedules. To learn how and why 92% of fleet operators using the dynamometer apply it to engine diagnosis under load, mail the coupon below. We will send you, *free*, a copy of "HOW THE CHASSIS DYNAMOMETER NETS FOUR-WAY MAINTENANCE SAVINGS," reprinted by special permission from the S.A.E. Journal, authoritative automotive engineering publication. Mail the coupon today for your copy.

THIS BOOKLET SENT FREE FOR COUPON

Clayton DYNAMOMETER

CLAYTON MANUFACTURING CO. AN-7
BOX 550, EL MONTE, CALIF.

Send _____ copies of "HOW CHASSIS DYNAMOMETER NETS FOUR-WAY MAINTENANCE SAVINGS," with catalog on C-61 Clayton Dynamometer.

NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

News of Manufacturers

Continued from page 245

1944 became director of personnel. In 1950 he was elected a director of Hertz Driv-ur-self, Inc., and Yellow Manufacturing Acceptance Corp. From 1938 to 1942 he was with the Detroit law firm of Beaumont, Smith and Harris.

Earl A. Maxwell was named to succeed Mr. Wilson as director of personnel.

MARTIN-SENOUR CO. has named Michael J. Duchek as representative in the southern Ohio-West Virginia area. His headquarters will be in Columbus, Ohio, and he will promote the sale of Martin-Senour automotive finishes from there.

AUTOMOBILE MANUFACTURERS ASSOCIATION President George W. Mason says that an all-out scrap collection drive is underway throughout the automotive industry. Pointing out that the defense program calls for an increasing supply of scrap steel, Mr. Mason, who also is president of Nash-Kelvinator Corp., says that the concerted, industry-wide effort is being coordinated by a special scrap subcommittee of the AMA. The subcommittee is headed by J. A. LaCourse. Packard Motor Car Co.

THERMOID COMPANY'S wholly-owned Canadian subsidiary, Joseph Stokes Rubber Co., Ltd., has concluded arrangements for the sale of substantially all of its assets to the General Tire and Rubber Co., Ltd., of Canada, according to F. E. Schluter, president.

The sale will materially improve the working capital position of the Thermoid Company, whose home offices are in Trenton, N. J.

MINNESOTA MINING & MANUFACTURING CO. has declared a $1 per share dividend on preferred stock and a 25-cent dividend on common stock for the second quarter of 1951.

Sales for the first six months of this year amounted to $85.8 million compared with sales of $65.5 million for the same period a year ago, an increase of 30 per cent.

Net income before taxes totaled $21.5 million for the 1951 first half, compared with $16.2 million for the first half of 1950.

JOHN F. YOUNG has been appointed division manager for Pittsburgh and western Pennsylvania by the Aro Equipment Corp., Bryan, Ohio. He will have full responsibility for sales and distribution of the company's automotive lubricating equipment through the jobbers in the western Pennsylvania area with offices in Pittsburgh.

AUTOMOBILE FACTS AND FIGURES' 1951 edition is off the press and, says the Automobile Manufacturers Association, the 80-page statistical review "highlights the essentiality of U. S. passenger cars."

Nine out of ten passenger cars in the nation are used each week for purposes of earning a living, shopping, or both, says the booklet.

Featured in the 31st edition are highlights of a comprehensive study of passenger car use in America, made early this year. They include:

1. During an average week 73 per cent of the nation's private automobiles are used for traveling to and from jobs, conducting business, or doing work on the farm.

2. Shopping during the week puts 53 per cent of the cars to work.

3. A total of 22 million passenger cars are used each week for earning a living; 16 million for shopping.

4. Some 27.5 million persons in the U. S. use passenger cars daily in earning a living.

5. Forty-five per cent of all em-

TROY
Takes over the complete line
of Stanchion Fittings of the
EXCEL CORPORATION.
A few of these fittings are shown.
Combining these with our own extensive line, permits TROY to offer the most assorted Stanchion Line in the country.
We are tooled and ready to produce this equipment for production or service repairs.
Send us your inquiries.
THE TROY SUNSHADE COMPANY, TROY, OHIO, U.S.A.

ployed persons use a passenger car in connection with their work.

6. More than 28 per cent of adults living in households without cars nevertheless ride in cars every day and, out of 9.4 million such persons, 3.7 million ride to work daily, 1.3 million obtain a ride for shopping.

Total vehicle production for the year was 8,003,045 units, including 6,665,863 passenger cars, and 1,337,182 motor trucks and buses. This brought the 51-year production of the industry to a total of 116 million vehicles.

Nearly 20,000 buses were produced by the industry during the year, 80 per cent of which were for school purposes.

The United States accounted for about 76 per cent of world motor vehicle output for the year, which was estimated at 10,557,426 units.

In spite of the high rate of 1950 production, 55 per cent of the cars in use in 1950 were prewar models, the average age being nearly eight years, compared with 5 and one-half years in 1941. One million trucks in use were 14 years or more old. Average truck age in 1950 was seven years, an increase of one and one-half years since 1941.

Gasoline consumption was up 10 per cent over 1949, the preliminary total for the year being about 35.5 billion gallons. This fuel was consumed as motor vehicles throughout the nation traveled a total of 456 billion miles.

Special motor vehicle taxes paid in 1950 totaled $4,354,033,000, an all-time record and a sharp increase of the previous hgh of $3,824,509,000 in 1949. Special truck taxes exceeded $1.2 billion.

THREE NEW MANAGEMENT and foremanship manuals, *Methods Improvement and the Foreman, Human Relations and the Foreman,* and *Safety and the Foreman,* were published Sept. 4 by National Foremen's Institute, New London, Conn.

The publishers said that these manuals make up volumes seven, eight and nine of their Standard Management Practice Series, which will consist of 12 volumes in all.

GRADY F. MATHEWS has been named World Bestos district manager for the Kansas, Nebraska and western Missouri district, according to an announcement from W. F. Rogge, manager of World Bestos' replacement sales division.

R. J. SIGAFOO has been named chief engineer of the Twin Coach Co., Kent, Ohio.

Continued on page 248

THEY DO IT EVERY TIME

Repeat! Repeat! Repeat!

MELFLEX

Orders are in the main, repeat orders from the *experienced* Bus and Transit Operators . . .

They Know

When they replace worn out "not-so-good step treads and flooring" —they specify Melflex. When they buy new equipment they specify Melflex—obviously.

Just now we're shipping Green Heavy Duty Melflex Flooring for 10 G.M.C. Coaches for Conestoga Transportation Co., LANCASTER, PA., Melflex Metal-backed moulded Step Treads and Mel-aisle Platform Blankets for St. Louis Car, Trolley Coaches for DETROIT, Street Railway—Melflex throughout for 40 St. Louis Car Co. trolley coaches for SAN FRANCISCO.

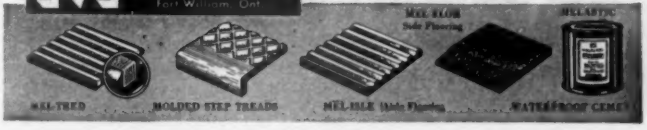
Melflex Step Treads and Bus Flooring for 6 St. Louis Car Co. Trolley Coaches for JOHNSTOWN, PA. Traction Co.

Melflex Step Treads for 63 Pullman-Standard Trolley Coaches for WORCESTER, MASS., and of course the 349 Marmon-Herrington Trolley Coaches for CHICAGO have Melflex Flooring and Step Treads.

For new jobs and for old ones too—leading experienced operators specify Melflex for under-foot safety—security—protection and long life.

MELFLEX PRODUCTS CO.
L. E. WARFORD, President
4105 Broadway, Akron 8, O.
In Canada: P. O. Box 411
Fort William, Ont.

Write for bulletins or any special information desired. MELFLEX, tuned to the transportation industry, offers a personalized service that is both prompt and satisfying in every regard. No order or problem is too large or too small.



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HALLOWELL®

STEEL WORK BENCH!

WHY? Because everybody wants the *best* equipment!

The man who *works at it* wants a HALLOWELL Bench because he likes its *convenience*, its *smooth, durable work surface*, and its *rock-solid "stance"*.

The man who *buys* it wants a HALLOWELL because its *standard-unit* design simplifies plant layout, its *trim, good looks* improve shop appearance, and its *tough, steel construction* eliminates maintenance and replacement for years to come.

Whether you *use* or *buy* work benches, you'll want our Bulletin 701. It gives complete details. Write for your copy today.

Work Benches	Posture Stools
Foreman's Desks	Posture Chairs
Tool Stands	Cabinets
Platform Trucks	Folding Tables

-SPS-

STANDARD PRESSED STEEL CO.

JENKINTOWN 4, PENNSYLVANIA

News of Manufacturers

Continued from page 247

Mr. Sigafoo was formerly engineering assistant to the president and will combine those executive duties with the responsibilities of his new post, President L. J. Fageol said.

LINWOOD L. ADAMS has been appointed manager, transportation planning, and T. Lester Fossick, Jr., has been named manager, traffic planning, of the United States Steel Co. Both Mr. Adams and Mr. Fossick have been assistants to E. G. Plowman, vice president in charge of traffic, who made the announcements.

DAVID E. GOW has been named assistant to George W. Marshall, Jr., Raybestos-Manhattan, Inc.'s vice president of asbestos sales.

During his six years with the company Mr. Gow has served as sales manager of Raybestos-Manhattan's packing division and has been in charge of the United States Asbestos Division's sales of brake lining and clutch facing to original equipment manufacturers.

He will continue to make his headquarters at the company's Manheim, Pa., plant.

BENDIX-WESTINGHOUSE AUTOMOTIVE BRAKE CO., Elyria, Ohio, has published a new 32-page condensed catalog.

The new catalog is intended as an aid to vehicle owners and operators —to provide general information about Bendix-Westinghouse products —to act as a guide in the selection of standard air brakes and accessory kits, popular service parts and repair exchange material.

Hundreds of service parts are illustrated along with nomenclature and piece numbers for easy identification. Air brake systems and devices are covered in detail.

The catalog will be made available through Bendix-Westinghouse distributors.

THE OIL INDUSTRY INFORMATION COMMITTEE has produced a full-color booklet, "Oil Serves You," which describes the workings of the American petroleum industry in easy-to-understand language for distribution by oil companies during O.1 Progress Week, Oct. 14-20.

NEW Precision made parts are necessary to restore worn shock absorbers to guaranteed dependable performance.

Practical economy-wise maintenance men are taking advantage of our fast reliable service.

All new parts are manufactured by us to obtain the high standards we employ in remanufacturing your shock absorbers. **Precision assembling assures dependable performance.** We are completely equipped and qualified by experience to render the prompt service you need. Send your worn shocks to us and save dollars.

National Transport Supply, Inc.

SHOCK ABSORBER, STARTER DRIVE AND WATER PUMP SERVICE

OFFICE AND PLANT

545 E. Hancock Detroit 1, Mich.

Transit Celebration . . .

Continued from page 102

possible future developments. In his address, Col. Bingham looked forward to—possibly—gas turbine engines, which may well replace the reciprocating engine because of their lighter weight, their ability to burn cheaper fuels while running up equivalent horsepower, their few moving parts.

Further, Col. Bingham mentioned currents Swiss experiments with using energy stored in a spinning flywheel to drive vehicles similar to trolley buses.

And, "in probing about for a glimpse of the future," Col. Bingham came to the underground belt system of transporting passengers. "The conveyor system gives promise of great carrying capacity . . . it is a new approach to mass transportation that may some day be just the solution needed in a particular time and place."

Formula Discussed

The colonel, chairman of New York City's Board of Transportation, also spoke of his "formula" for the solution of the peculiarly difficult problem of financing transit operations. (*Aug. B. T., page 55*). He suggested a new type of government business entity, combining the best features of private and municipal enterprise. "Privately-owned transit properties would be acquired by a city or state in return for revenue bonds issued for a specific term. Interest and amortization and operating expenses would be met out of fares. With tax exemptions and this type of financing, total costs would probably be low enough to enable the retention of a competitive rate of fare.

"Direction and operation of the enterprise would remain in the hands of the existing private management with overall control vested in a board of directors. The board of directors would have government and bondholder representation, and would consist of men outstanding in the community and well versed in the operation of business enterprises. Private management would remain in control providing that the balance sheet and operating statement show it to be successful and alert. It would be given sufficient authority to run the property in the most efficient manner possible. The setup would be conducive to the operation in the best traditions of private enterprise."

CONSERVE weight
PRESERVE surface finishes
OBSERVE reduced costs

with Rigidized Metals
design-strengthened textured
. . . and get

INCREASED SECTION THICKNESS

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LOWER MAINTENANCE COSTS

Increased strength-weight ratios, together with its outstanding versatility, make Rigidized Metal a valuable and economical material throughout every industry. A redistribution of metal permits gage reductions that help to conserve strategic materials. Product life is prolonged with the mar-resistant surfaces of this modern metal. Your product will have increased value through your use of Rigidized Metal.

Write on your company letterhead for a copy of the RIGIDIZED METALS CONSERVATION HANDBOOK Today

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There's Always a "New" Clamp on your hose

WITH

"Aero-Seal"

The clamp you need is right there when you need it when you've installed Aero-Seals. You re-use the same Aero-Seals again and again—no running to the store or stockroom for replacements!

REPLACE IN ANY POSITION

The Aero-Seal won't crimp, distort hose, cause leakage. Curved band holds pressure even all around—won't cut.

VIBRATION-PROOF

When threads of worm engage with steel slots in band you can't shake an Aero-Seal loose in a million miles of rough driving. Seals tight, stays tight!

ONE-HAND REPLACEMENT

You can install an Aero-Seal any place you can reach with your thumb and one finger. Integral construction . . . no screws to lose. Screw-driver slot and thumb-grip types.

ANOTHER BREEZE MARK PRODUCT

"Aero-Seal" WORM DRIVE HOSE CLAMPS

All Aero-Seals have stainless steel bands. Write today for FREE SAMPLE.

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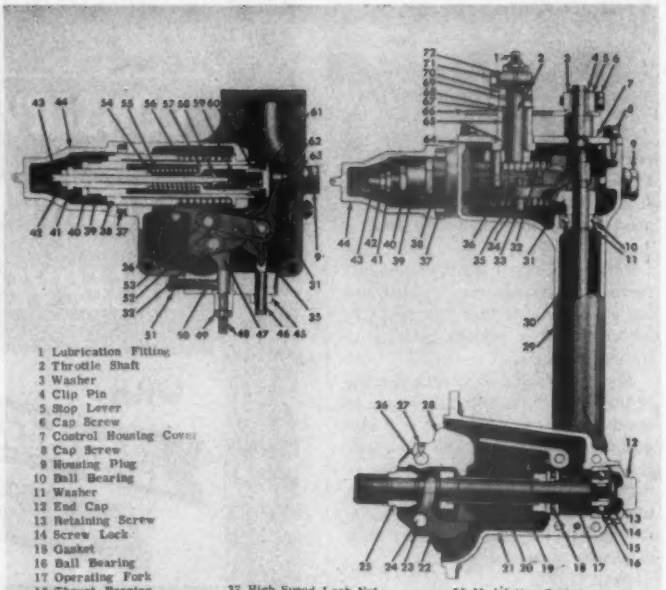
41 South Sixth Street • Newark, N. J.



1 Lubrication Fitting
2 Throttle Shaft
3 Washer
4 Clip Pin
5 Stop Lever
6 Cap Screw
7 Control Housing Cover
8 Cap Screw
9 Housing Plug
10 Ball Bearing
11 Washer
12 End Cap
13 Retaining Screw
14 Screw Lock
15 Gasket
16 Ball Bearing
17 Operating Fork
18 Thrust Bearing
19 Riser
20 Weight Shaft
21 Weight Housing
22 High Speed Weights
23 Needle Bearings
24 Weight Pin
25 Weight Carrier
26 Weight Pin
27 Set Screw
28 Low Speed Weights
29 Control Housing
30 Operating Shaft
31 Operating Lever
32 Torsion Spring Screw
33 Roller Pin
34 Roller
35 Differential Lever
36 Torsion Spring
37 High Speed Lock Nut
38 High Speed Adjusting Screw
39 High Speed Spring Plunger
40 Modulating Screw Lock Nut
41 Modulating Speed Adjusting Screw
42 Idle Speed Screw Lock Nut
43 Idle Speed Adjusting Screw
44 Adjustment Cover
45 Buffer Screw Lock Nut
46 Buffer Screw
47 Modulating Cam
48 Cam Adjusting Screw
49 Screw Lock Nut
50 Cam Lock Screw
51 Plugging Screw
52 Clip Pin
53 Washer
54 Modulating Spring Seat
55 Modulating Spring
56 High Speed Spring
57 Modulating Spring Plunger
58 Low Speed Spring Seat
59 Low Speed Spring
60 Retainer Ring
61 Low Speed Spring Cap
62 Lock Nut
63 Low Speed Gap Adjusting Screw
64 Cover Gasket
65 Roller Bearings
66 Control Cam
67 Seal
68 Seal Washer
69 Taper Pin
70 Control Lever
71 Cap Screw
72 Throttle Lever

"BUILT-IN-BRAIN"—or new GMC fuel modulator—governs fuel flow for maximum efficiency and economy, feeds exactly correct amount of fuel regardless of throttle pressure below 1,500 rpm.

G.M. "Million Miler"

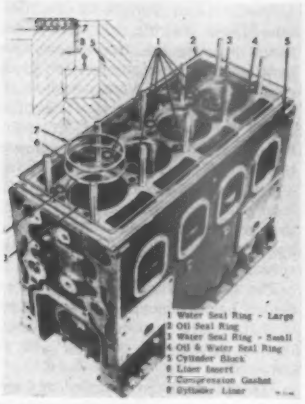
A RUGGED NEW "Million-Miler" Diesel engine with more power, amazing economy, greater performance and longer life was introduced today throughout the extensive line of GMC Diesel trucks and highway tractors by the GMC Truck & Coach Division. It is understood the new power plant will be available for bus use.

Built to haul a million miles and more, the "Million-Miler" is a new design of the famed 4-71 and 6-71 GM Diesel engines. None of the changes will obsolete former GMC Diesel engines, for the new components were especially designed to be interchangeable with the old.

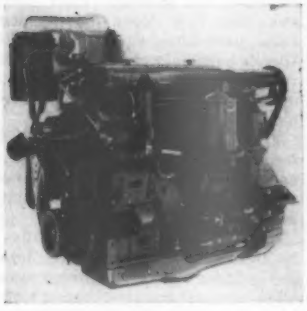
H.P. up 12½ Per Cent • Horsepower in the four-cylinder (4-71) "Million-Miler" has been boosted to 150 B.H.P., as compared to 133 in the former model, while the six-cylinder (6-71) engine has had 25 extra horsepower built into it, now being 225 B.H.P.

Although horsepower has been increased, a highly important fuel economy has been effected, it is said.

Most important factor in achieving the new fuel savings is a revolutionary device called a Fuel Modulator, an automatic control that feeds exactly the right amount of fuel and air for maximum efficiency *regardless of throttle position*. Acting like a mechanical "brain," the Fuel Modulator exerts its modulating effect on the flow of fuel at engine speeds below


1 Water Seal Ring - Large
2 Oil Seal Ring
3 Water Seal Ring - Small
4 Oil & Water Seal Ring
5 Cylinder Block
6 Liner Insert
7 Compression Gasket
8 Cylinder Liner

ENGINE BLOCK shows how former head gasket is eliminated. Rings, gaskets seal oil and water openings.



GMC DIESEL, both 4-71 and 6-71 models, has many new departures.

Diesel

1,500 rpm, the point where, heretofore, a driver could "lug" the engine and waste fuel by operating the vehicle in an uneconomical gear range when he should have shifted into another.

The Fuel Modulator, which is incorporated in a new governor assembly, also is an entirely new contribution toward longer engine life by preventing engine abuse. It restricts "sludging up" and carbon deposits, and thus reduces the need for maintenance, it is stated. In the former models when engine speed was reduced blower speed was reduced correspondingly, but excess fuel still could be injected.

Continued on page 252

at LOWER COST-PER-MILE, too

Hunt-Spiller Brake Drums are now being made of a new Gun Iron alloy which eliminates heat-checking in all but the most severe cases and at the same time equals or surpasses the wear-life of previous Gun Iron drums. In addition, in most instances, these drums take the squeal out of heavy-duty braking.

Hunt-Spiller pioneered the first cast brake drum over twenty years ago . . . a Gun Iron drum that wore so well it shortly was adopted and preferred by the bus and truck industry. This *new* material, an alloy of Gun Iron, is the result of years of research in the Hunt-Spiller laboratories to increase wear-life and particularly overcome the serious problem of heat-checking. On-the-road performance records prove the success of that research.

Hunt-Spiller drums are made to original equipment specifications for most busses and trucks. They are accurately machined for easy, kink-free installation; fully guaranteed. For complete details send for new descriptive bulletin which includes some outstanding results reported by users.

HUNT-SPILLER GUN IRON AIR FURNACE PROCESS HSGI

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MANUFACTURING CORPORATION
AUTOMOTIVE DIVISION
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REDUCE MAINTENANCE COSTS

Use Moto-Gard to reduce Maintenance Costs and insure Longer Life for Your Motors. Moto-Gard will protect your Motor against Damage from an Oil Failure or Overheating. It automatically stops the Motor Ahead of Any Damage if the Oil Pressure runs too low or the Motor gets too hot. MOTO-GARD will make your Equipment Safer and More Profitable.

REASONABLY PRICED . . . EASILY INSTALLED

Full Information on Request

"Don't Buy Motors — Buy Moto-Gard"

THE MOTO-GARD COMPANY

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Refinish With

HARDCOTE

All-weather Wonder Finish

18 WASHABLE GLOSSY COLORS

Resists sun-rain-sleet-snow

Stays bright and washable

Make the "Hardcote" test on your equipment. Prove it beyond comparison for fleet refinishing. Color card and information. Write today!

McDOUGALL-BUTLER CO. Inc.
BUFFALO 14, NEW YORK

Better cooling-longer life for your maintenance dollar!

ALWAYS SPECIFY...

Genuine

LAKE

CELLULAR-TUBULAR RADIATOR CORES

THEY'RE GUARANTEED!

Inquiries invited.

The Lake Auto Radiator Manufacturing Co.

Dept. BT

5005 Euclid Avenue Cleveland 3, Ohio

Another new feature of the "Million-Miler" that has increased horsepower is a camshaft that keeps valves open through a greater portion of the shaft revolution, as compared to the former engines. The new camshaft opens the valves longer providing freer breathing, better scavenging of the burned gases and a better charge of fresh air. Whereas the Fuel Modulator cuts fuel waste below 1,500 rpm, the camshaft improves fuel economy approximately six per cent at engine speeds above 1,500 rpm.

The governed top speed of the new engine has been increased from 2,000 to 2,100 rpm to boost performance. At this speed, less shifting will be required.

The higher range of speed and extra horsepower will be welcomed by drivers who want additional power for hills. Operators have found that the GMC Diesel tends to "flatten" the hills with almost no restricting of passenger car traffic, and the "Million-Miler" is expected to further minimize the problem. Fleet operators also have found that accident rates have dropped because GMC Diesels have not needed a high-speed run toward a hill as some gasoline models do, thus increasing accident hazard.

Fuel injectors have been changed from 70 to 80 Cu mm., to supply the necessary amount of fuel for the optimum air-fuel ratio for good combustion.

No Head Gasket • The cylinder head and cylinder block have ground faces, allowing metal-to-metal contact without need for a cylinder head gasket. Synthetic rubber rings and strip gaskets seal water and oil openings, while a Belleville (cupped) washer type ring seats on the individual cylinder sleeve and seals the combustion chamber. The cylinder head is heavier-proportioned, with increased wall thickness, heavier ribs and struts to minimize deflections, while the crankcase has heavier wall thickness and new increased thickness of the cylinder top deck.

Cylinder sleeve counterbores in the top of the block are deeper and carry steel inserts for seating the sleeves, thus providing obvious servicing advantages.

Longer Engine Life • Further improvements to lengthen engine life include a stronger crankshaft, a Houde viscous damper, and heavy-duty copper lead bearings for the crankshaft and connecting rods. The crankshaft is a heat-treated steel forging, has Tocco-hardened journals and pins, roll-burnished fillets after grinding

and peened oil holes, all of which increase durability. Torsional vibration will be controlled by the new damper, which functions over a greater speed range than the old type, giving longer shaft and beairng life.

New valves are seated at a 30 degree angle (formerly 45 degrees) to reduce pounding of the valve face at the higher speeds, and are Stellite-faced for longer life.

Injector rocker arms are of the new one-piece "pallet" type to improve contact and durability.

Both the No. 1 and No. 2 piston rings now are chrome-plated to increase life and minimize the possibility of stuck rings. Oil control rings are of a new heavy-duty type and are expected to reduce oil consumption to one-third of previous experience.

Sohio HQD Motor Oil

DEVELOPMENT OF A detergent-dispersant, heavy-duty, "engine-conditioning" motor oil, designed to set new standards of automotive engine performance by increasing efficiency and economy of operation through its dual "cleaning and conditioning" feature, is announced by The Standard Oil Company (Ohio).

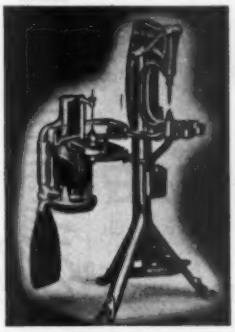
Named "Sohio HQD," the new oil is hailed by Sohio as "one of the most important improvements we have been able to make in 81 years' experience of refining petroleum products." It is produced from solvent-extracted base stocks and blended with a number of special additives, including foam inhibitors, pour point depressants, V. I. improvers, oxidation inhibitors, rust prevention and detergent-dispersant and additives.

Combining the superior qualities of a high viscosity index oil with the exceptional detergent characteristics of supplement-one type oil, plus the added protection of a high alkaline reserve factor, Sohio HQD is said to be suitable for use in any type of internal combustion engine—buses, trucks, automobiles, taxicabs, tractors, motorcycles, outboard motors, marine engines, lawnmowers, aircraft engines and industrial engines—where an automotive motor oil is recommended.

Sohio's new super-detergent oil is said to have three times the cleansing action of conventional detergent-type oils and to hold three times as much dirt in suspension. It eliminates the need of flushing oil engines and keeps new ones clean by preventing accumulations on pistons, valves, oil lines, screens, and hydraulic valve lifters, it is said.

The oil's detergent action is claimed to loosen and absorb the binders holding these engine deposits to the metal; its dispersant action "homogenizes" the loosened contaminants, holding them in safe, harmless suspension in the form of microscopically minute, semi-liquid particles so that these foreign materials and the oil are drained out *together*. By holding these accumulations in suspension and preventing their precipitation and agglomeration in the crankcase, Sohio HQD effectively prevents sludge formation, it is stated.

In addition to improving the operating condition of old motors as well as keeping new ones virtually "factory-clean" by safely dissolving and "homogenizing" harmful deposits into a harmless solution through its dual detergent-dispersant action, this new oil is also said to provide a number of other important advantages.



Positive brake performance is not only an absolute MUST for safe bus and truck operation . . it is also essential to economical operation and low-cost maintenance. Brakes lined with the S-T 105 function smoothly under all operating conditions; the lining wears longer and will not work loose from the shoe.

The 105 is especially designed for heavy duty work, particularly where extra plunger travel is required to accommodate heavy shoes with deep webs. It incorporates the Thomason patented Arc Method of grinding with the Multi-Power Compounding Unit which handles the largest size solid copper rivets.

EVERY PIECE OF S-T EQUIPMENT IS THOROUGHLY INSPECTED AND TESTED BEFORE DELIVERY

S-T Model 105

Heavy Duty

BRAKE LINING AND GRINDING MACHINE

●

Easily Handles Largest Size Solid Copper Rivets

●

1¾" Plunger Travel For Extra Heavy Shoes

●

For fast, accurate high-quality brake work, you can depend on the Thomason Model 105. Consult your jobber for complete information, or write direct to:

SHEPARD-THOMASON CO.

Manufacturer of the Finest Line of Brake Lining Equipment in the World

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LOOK SHARPER
IN FINE QUALITY

M-L UNIFORMS

Uniforms with all the snap . . . the fit . . . the comfort that masters of the trade can build into them . . . these are M-L uniforms. Top quality fabrics, careful styling and expert tailoring are combined to give you the finest uniforms money can buy.

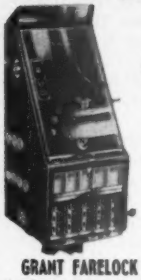
For smart, durable uniforms that match the pride your employees feel in their jobs, you'll want M-L uniforms. Write today for samples and prices.

Maier-Lavaty COMPANY UNIFORMS

Originators and designers of uniforms for Greyhound and other operations.

2141 LINCOLN AVENUE, DEPT. TR, CHICAGO 14, ILLINOIS

Two Amazing New Fare Collectors



GRANT ELECTROFARER

Completely automatic. Provides a robot assistant to your driver and your treasurer without adding to your payroll. Shows what your present fare collection equipment is costing you.

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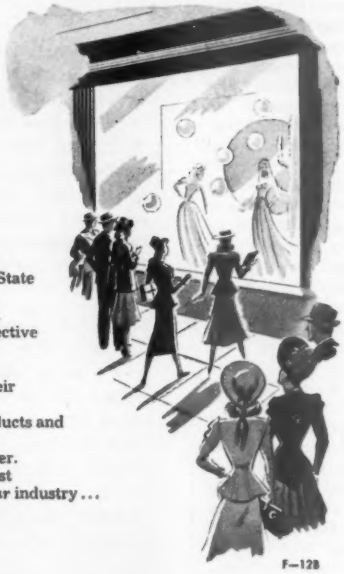
Non Registering Lock Box. This revolutionary super high-security lock box presents an entirely new picture for lock box operation. It exposes where your losses come from in your present lock box.

Indicate which type you are interested in when you WRITE FOR DETAILS

MONEY-METERS, Inc.
17 Warren Street, Dept. 8
Providence 7, Rhode Island

IF IT'S **here . . .**

IT'S **news . . .**



IT'S WORTH STOPPING TO SEE!

Maybe Industry doesn't maintain show windows on Fifth Avenue or State Street or Wilshire Boulevard like America's great department stores. But your industry has a mighty effective show window . . . *and this is it* . . . this magazine. In these advertising pages alert manufacturers show their wares. Here you will find up-to-the-minute news about products and services designed to help you do your job better, quicker, and cheaper. To be well-informed about the latest developments in *your* business, *your* industry . . . and to stay well-informed . . . *read all the ads too.*

F—128

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McGRAW-HILL PUBLICATIONS

RE-MANUFACTURING SERVICE...

that saves Bus Armature and Maintenance Costs

Today parts are scarce, making this service of great value.

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Ask about our prices. Let experts save money for you. Send for catalog.

Precision Work
Prompt Service
19 Years Experience

1. Repairs on Bus Armature Spiral Starter Shafts

Here is our latest service that is really saving money because repeat business is already coming to us. This repair service on milled grooves of spiral splines gives you a precision job. We weld the worn milled grooves with high grade steel and machine grind them to the exactness of a new shaft. Why purchase new starter bus armatures when Automotive Generator Service can save you the cost and you only pay for a repair job that puts your bus armatures back into active service.

2. Re-manufactured Bus Armatures

Here is a service that has been doing a cost-saving job for bus operators from coast to coast. Automotive Generator Service re-manufactures bus armatures so that in many cases they have performed for twice the ordinary mileage. There's a lot more than re-winding to this service—you get a thorough re-construction job—complete rebuilding—including shaft, core, windings, commutator, etc.

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E. J. FUSCH, President

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STOLEN FARES?

By operators "knocking down" or by passengers' stealing rides." Practical Perey Turnstile Systems efficiently get more fares.

Install **PEREY TURNSTILES**

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BUS AGENTS

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MEXICO

SCHEDULE INFORMATION CORRECTED MONTHLY

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EMPLOYMENT • BUSINESS • **OPPORTUNITIES** • EQUIPMENT—USED or RESALE

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Suburban Routes

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P 1834 BUS TRANSPORTATION
330 W. 42 St., New York 18, N.Y.

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NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

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4—35 Pass. Beck Hi-Backs
2—24 Pass. Beck Recliners
1—29 Pass. Beck Transit
1—55 Pass. Brockway School
1—25 Pass. Fitzjohn Hi-Backs
4—19 Pass. CUB Transits

WILLETT BUS SERVICE, INC.
332 S. Michigan Ave. Chicago 4, Ill.
Telephone HArrison 7-6280
Home Phone
Michigan City, Ind. 2-3972

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50 Beck—29 pass.
49 Beck—37 pass. air conditioned
46 & 43 Beck—33 passenger Mainliner
46 Beck—28 pass. Steeliner
44 Flxible—29 pass.
41 Flxible—25 pass.
47 Fitzjohn—28 pass. Duraliner
45 Fitzjohn—35 pass. Falcon
43 & 44 Fitzjohn—35 pass. Cityliner

Let us know what you need and what you can release now.

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3 — 1946 37 Passenger
15 — 1947 37 Passenger

These Buses Are In Top Condition

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1—1945 Model 29 Pass. Flxible very clean, Buick Power, Refinished.
1—1950 Chev. Stretch Low Mileage, 11 Pass. Sept. 10th delivery.

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Ottumwa, Iowa Phone 53

FOR SALE

6—Late 1947 Model Fitzjohn Duraliners 500 Series
3—28 passengers with recliner seats
3—32 passengers with recliner seats
Low Mileage—In A-1 Condition
Priced to Sell with Tires

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8 TD 35 pass. diesel, high-back suburban seats

6 PD 3302, 33 pass. reclining seats

3 PD 3702, 37 pass. reclining seats

10 TD 2701, 27 passenger city type

21 TDH 3206 & 3207 city type, 32 pass. Some located California

5 1948 Flxibles, 29 pass. Buick eng., reclining seats, $1,200 in extras —absolute top condition

4 1945 Aerocoaches—37 pass.

1 1947 Aerocoach—37 pass.

2 1947 Fitzjohn Duraliners—28 pass.

1 1948 310 Fitzjohn City-liner—very clean

1 1946 37 pass. Beck, 450 Red Diamond Eng.

10 ACF's model C-36

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"Go 5525"

WANTED

International
R-10 and R-13
Fare Registers

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330 West 42nd Street
New York, New York

1—1942 Aerocoach, 37 Passenger—Reclining Seats
1—1946 Beaver Transit, 35 Passenger—Rear Exit Door, City Type Seats
2—1947 Beaver, 33 Passenger—Intercity Type
These are in good condition and are in daily operation.
10—Used School Buses, 1938 to 1946 Model

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1903 N. Western Avenue
Dayton 9, Ohio.

FOR SALE

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451 G.M.C. Motors
1—1942 A.C.F.—37 Pass.
2—1938 A.C.F.—37 Pass.

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EXCELLENT CONDITION
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2—1946 Aerocoaches, 37 pass. recliners
1—1947 Flxible DeLuxe Airporter, 23 pass.
10—1947 White 798 Transits, 44 pass.
3—1949 Flxibles, 33 and 37 pass.
4—1944 Ford Transits, 6 and 8 cyl.

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PROMPT DELIVERY

4 GMC TDH 3610, 1948, Very Clean. Particular interest Eastern Operator.

10 BECKS, 1942/1947, Very Clean.

45 MACK C-41, Very Clean.

2 GMC TDH 3207, 1947. Excellent Condition.

20 WHITES 798, 1945/1948, Excellent condition.

3 GMC TDH 3609, 1946, Real Buy.

5 FLXIBLES, 1948, Excellent Condition.

7 GMC PG & PD 2901-02-03 All Clean.

Several GMC 1204s—2405s and 2706s.

4 FITZJOHNS 1947/1950, Very Good Condition.

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G. A. MacLean Company

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Tel.: WAbash 2-6993

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Coast to Coast

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3 Yellow—27 Pass., TGH 2708, 1949
20 Yellow—36 Pass., Model 3609, 1944-47
3 ACF—44 Pass., 2 Doors, 1948
1 ACF Brill—30 Pass., 1948
3 MACK—37 Pass., 1948-49, Gas and Diesel
10 MACK—32 Pass., 2 Doors, Model LC, 1942
2 BEAVERS—36 Pass., 1947
25 FORDS—27 and 29 Pass., 1945-48
10 WHITES—Model 782, 31 Pass., 2 Door
20 WHITES—37-45 Pass., Model 708, 798

DE LUXE
15 ARROW Coaches—37 Pass., 1945-48
3 Yellow Diesel—29-33 Pass., 1948
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10 Yellow Gas—29-37 Pass., 1942-45
7 ACF—37 Pass., 1940-42
5 ACF—IC41—37-41 Pass., 1947-48
10 BECKS—24-37 Pass., 1945-48
10 FLXIBLES—25-33 Pass., 1941-46

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2—1940 GMC PG 3701.

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Missouri, Kansas & Oklahoma Trailways
Cincinnati at Fourth — Tulsa 3, Oklahoma

14
18

FOR SALE

~~25~~ 782 31-PASSENGER WHITE COACHES

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6 cyl. and 8 cyl.
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City and Intercity models
Economical to buy and maintain
Southeastern Distributor
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Providence 4, Rhode Island

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1—1943 Beck 33 Passenger, reclining seats, red diamond motor, uses no oil, good tires, reconditioned throughout, painted blue & white—price $2,750.00.
1—1942 Aero Coach 37 passenger, reclining seats, tires good, motor just overhauled, painted blue & white—price $1,995.00.
1—1944 Flexible 25 passenger new Chev. Motor, silver sides, new blue & white paint, extra good tires, reclining seats, bus like new throughout—price $2,500.00.

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WELL'S BUS LINE
Phone 102, Anderson, S. C.

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GIVES YOU

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Greater protection for heavy-duty engines with...

New and better...

STANOLUBE HD-M

REG. U. S. PAT. OFF.

Motor Oil

● Take a close look at the pistons shown in these unretouched photographs. They give graphic evidence of the superior protection new STANOLUBE HD-M Motor Oil offers in automotive diesel and heavy-duty gasoline engines.

The larger of the two pistons was taken from a diesel test engine after 480 hours operation (the Caterpillar No. 1-A Test) and shows clean, deposit-free ring grooves. The smaller was removed after test in a gasoline engine (the Chevrolet 36-hour Test) and reveals no varnish-like deposits on the piston skirt.

Here's graphic proof of two important properties of this new motor oil: improved detergent-dispersant action and greater oxidation stability.

These two properties, proved by laboratory tests and confirmed in extensive field service, mean superior protection under the most severe conditions of high operating temperatures and prolonged periods of operation. Engines stay clean, free of harmful deposits. The results: longer engine life, more miles and hours between overhaul, and less maintenance . . . even when the going is tougher than ever.

New STANOLUBE HD-M Motor Oil offers these two properties in addition to the same qualities of corrosion resistance and freedom from foaming which helped make STANOLUBE HD a preferred lubricant for heavy-duty applications during the past nine years. To make the best use of this new and better motor oil, ask for the services of the Standard Oil lubrication specialist in your area. Phone your local Standard Oil Company (Indiana) office or write Standard Oil Company (Indiana), 910 South Michigan Ave., Chicago 80, Illinois.

A Complete Line of Motor Oils for Every Heavy-Duty Service Need

STANOLUBE HD-M is recommended for all internal combustion engines. It meets U. S. Army specification MIL-0-2104. This lubricant provides excellent cleanliness, low wear rate, and low oil consumption under severe operating conditions. Available in all SAE grades.

STANOLUBE S-1 is recommended for use in automotive, diesel, or gasoline engines where other heavy-duty oils cannot control deposits caused by operational severity or adverse fuel quality. It meets requirements of MIL-0-2104 and the requirements for "series 1" type oils as well. Available in all SAE grades.

STANOLUBE HLA is recommended for use in supercharged diesel engines and in other engines that operate under the most adverse conditions. It meets the requirements of MIL-0-2104 and the requirements of "series 2" type oils. Available in SAE 10 and SAE 30 grades.

STANDARD OIL COMPANY (INDIANA)

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